



# **MODALITIES OF REGULATION IN THE INFORMAL ECONOMY: A STUDY OF WASTE COLLECTORS IN CAPE TOWN**

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**Suzall Timm**

TMMSUZ001

Thesis presented for the degree of

DOCTOR OF PHILOSOPHY

In the Department of Public Law, Faculty of Law

UNIVERSITY OF CAPE TOWN

July 2015

Supervisor: Professor Clifford D. Shearing

University of Cape Town

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**Suzall Timm**

**July 2015**

## Abstract

A large amount of people in South Africa earn their living from recycling waste on landfills or the streets in cities across the country. Much is written about those operating on landfills, although a few studies focus on those operating on the streets. The latter studies largely focus on the socio-economic conditions and collective organising capacity of these informal sector workers, and their relationships with other actors. Although, these studies provide a useful resource for understanding the nature of their work and the contexts in which it emerges, very little is known about how their work is regulated. With this in mind, this thesis asks the following research question; how are informal activities regulated in the city? Drawing on the idea of non-humans as actors (in Actor Network Theory terms) this thesis argues that informal activities are regulated by hybrid modes of regulation that include human/non-human and formal and informal assemblages.

The research was conducted between 2008 and 2014. It made use of qualitative methodologies and approaches, i.e. semi-structured interviews, participant observation, and documentary analysis, as methods of data collection.

The findings of the research reveal that informal activities are regulated in the followings ways. Firstly, it shows that objects such as trolleys, carthorses, *bakkies* and storage facilities are regulators that actively enabled or constrained informal waste activities. Secondly, the findings suggest that these nonhumans play an active role in organising the spaces where informal waste activities are carried out. Finally, the findings show that these nonhumans also play an active role in how informal waste collectors build alliances through assembling hybrid collectives of humans and non-humans in order to mobilise resources.

The main finding in this study is that regulation in the urban informal economy is constituted by human/non-human and formal/informal assemblages. Including the non-human in the analysis of regulation in the urban informal economy is important because it contributes to a better understanding of regulation in the urban informal economy. It does so by highlighting that regulation in the

urban informal economy is not only based on human social relations consisting of rules, norms, and institutions but is constitutive of assemblages that involve all actors (both human and non-humans).

**Publications related to the PhD**

Timm, S. forthcoming. Micro-scale collectors, skarelaars in Philippi. In *State/society synergy in Philippi*. M. Luthango-Brown, Ed. Cape Town: African Centre for Cities.

Wordcount of main body of thesis (including footnotes): 82, 957

## Acknowledgements

I would like to express my special appreciation and gratitude to my supervisor Professor Clifford Shearing. You have been a tremendous mentor to me and I will carry your wisdom with me for the rest of my life.

I am deeply grateful to all the men and women who have made the 'wheelie' bin visible. Without you this research would not have been possible. Thank you to all the hardworking women and men who opened up their homes and workspaces to me, answering my questions with patience and kindness.

The research would not have been possible without the very generous financial support from the National Research Foundation (NRF) of South Africa and the Oppenheimer Memorial Trust. I wish to thank Dr Simon Howell for his thorough and constructive feedback in the final stages of my PhD. Thank you Ricky Rontsch for editing my work.

Thank you to the Centre of Criminology, the place where the impact of nonhumans was made real for me. To all my colleagues who were all so voluntarily enrolled in the making of a vibrant academic environment. Thank you Prof Shearing for your Foucaultian schemes and for making us aware that power is everywhere, even in the subtle colour of a wall!

I wish to thank my sisters and comrades of the Rita Edwards Collective. You came later in my PhD journey but were an integral part of finding my voice politically and academically. My friends there are too many to mention, thank you for all your love and support.

Finally, I would like to express my deepest gratitude to my family, Edward, Christine, Edwill, Bonita, Crystall, Marquinne and Juneid. This journey was never solely mine but yours too. We made it! To my late sister Bonita, to whom this thesis is dedicated to, your smile, will forever be in my heart.

## **DEDICATION**

To my sister Bonita who passed away



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### **List of Abbreviations**

ARTS	Athlone Refuse Transfer Station
CoCT	City of Cape Town
CHPA	Carthorse Protection Association
DEAT	Department of Environmental Affairs and Tourism
ILO	International Labour Organisation
IWMB	Integrated Waste Management Bylaw
IWMP	Integrated Waste Management Policy
KIWMPF	Kraaifontein Integrated Waste Management Facility
NGO	Non-governmental organisation
NPO	Non-profit Organisation
NWMS	National Waste Management Strategy
MRF	Material Recovery Facility
SWM	Solid Waste Management
SRTS	Swartklip Refuse Transfer Station
WIEGO	Women in Informal Employment: Globalising and Organising

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## Chapter One: Introduction

One morning in November 2010 I accompanied David, a *skarelaar*, on a municipal waste collection day, as he carried out his activities in Rosebank, an area situated in the Southern Suburbs of Cape Town. David is homeless and sleeps in a nearby park in Rosebank. He has been '*skarreling*' in this area for the past year. He started off at his usual place, a block of flats in Lower York Road where, sometimes, if he is early enough, he helps the caretaker take out the wheelie bins to the sidewalk before the waste collection truck arrives. That morning David and I were a little late as we arrived just as the caretaker put the last set of wheelie bins on the sidewalk. We were the first to arrive at the wheelie bins and the streets were quiet with a few local residents making their way to work. He pulled his trolley closer to the one end of the wheelie bins and explained that in order to sort and separate the waste effectively it is easier to unpack all the bag blacks and then empty the waste into the wheelie bin. He opened the lid of the wheelie bin and the stench of the waste from inside the wheelie bin became stronger. David was not bothered by the smell and continued to unpack the bags, taking out newspapers and magazines that were lying on top of the black bags in the wheelie bin and putting those aside. Once this was completed he opened each black bag and emptied it into wheelie bin and carefully inspected materials like paper and plastic and put them aside. He explained that it is important to inspect the materials to make sure that they are not wet or contaminated because the cleaner the material (in the case of plastic or glass) or drier (in the case of paper) the better it is. As he was busy inspecting and separating the recyclable materials from the wheelie bin, he re-used the black bags for the recyclable materials and separate materials on the trolley as he went along. We moved onto the next set of wheelie bins and David lifted up the first black bag and said, "Today we are lucky - looks like there was a party here this weekend." There was a lot of wine and beer bottles in the black bags and David transferred them directly into the deep cage of the trolley. David's trolley was almost filled to capacity when he discovered an old kettle in one of the wheelie bins. He removed the kettle and then called the caretaker who was busy cleaning a nearby area. As the caretaker

approached, David asked if he could sign a piece of paper stating that the kettle was found in the bin with his name and contact number. The caretaker agreed to do so as this was not the first time that David had asked him to provide proof that he had not stolen recyclable materials. David explained that the signed paper was important: if he got stopped by the security officers or the police he could present it as proof that the kettle was not stolen. While working on the last set of wheelie bins a community improvement district van pulled up and David immediately stopped working and politely greeted the security officers. One of the security officers climbed out of the car with his radio in hand and asked David if he could see what was on the trolley. While inspecting the trolley, the security officer asked him about the kettle and David presented the white piece of paper with the signature and contact details of the caretaker. The security officer then asked David about the trolley and why it looked different from when he had seen it last. David explained to the security officer that part of the grid came loose in a fight that he had a few nights ago and he had to add an extra crate so that the materials would not slide out. The security officer shook his head as he walked and said, "You are lucky that this trolley is broken because we would have taken it otherwise". He also added, "You better not make a mess." As the van pulled away David explained that the security officers from the community improvement district often stopped him and inspected his trolleys because sometimes people carried stolen goods on trollies. He then said that this was not nice because he was always treated like a suspect.

Seeing this scene play out in different ways and different spaces across the city led me to think more deeply about how this type of activity is regulated in the city: who regulates it?; what is regulated?; how are these activities regulated? David's activity at the trolley and with the trolley bring to the fore that the trolley is not just a form of transport or a mobile sorting site that makes the separation of recyclable materials easier. The trolley actually plays an active role in regulating how David interacts with other actors, such as community improvement district security officials, the local police and so forth. In this sense, it is not only David and his

presence in a particular neighbourhood that determines how his work is regulated, but his interaction with the trolley itself and the actions that are delegated to the trolley that regulates his work.

To shed light on how informal activities are regulated I conducted a case study of informal waste collectors in Cape Town. Drawing on the idea of non-humans as actors (in Actor-Network Theory, hereafter ANT, terms) I argue that informal activities are regulated by hybrid modes of regulation that include assemblages of humans/non-humans and formal/informal arrangements. I suggest that these assemblages are heterogeneous, dynamic and actively create or constrain the daily activities of informal waste collectors in the city.

The next section provides a brief contextualisation of the scholarly engagement with how informal activities are regulated and the challenges and gaps that emerge regarding this phenomenon in the literature. It also explains how this thesis explores the issues emanating from this engagement. The following section introduces and explains the key concepts that inform this thesis. This is followed by the research problem and the main argument. The section after that outlines the main research question and the research methodology employed to answer this question. Finally, this chapter discusses the significance of the study for existing literature and concludes the chapter with an outline of thesis.

## **1.1 Background of the study**

In earlier scholarship on the urban informal economy, particularly in the 1970s and 1980s, there was a widespread notion that the informal is 'unregulated'. This is evident in how the concept of the informal economy was often defined by scholars and international institutions (see for e.g. ILO, 1972; Castells, 1989). One of the key reasons for conceptualising the informal as 'unregulated' was because state law was considered as the main form of regulation (Lourenco-Lindell, 2002). This was informed by dualist conceptions that put the formal and the informal at odds with one another. For instance, where regulation was discussed in the context of the

informal economy it was often associated with social regulation (in the form of customs) (see for e.g. Geertz, 1963) and regulation in the context of the formal economy was associated with policies and legislation (in the form of tariffs, trade licences and so forth) (see for e.g. ILO, 1972).

The rise of globalization and increasing economic restructuring in developing countries led to the increased informalisation and casualisation of the urban informal workforce. As a result, the notion of the urban informal economy as ‘unregulated’ also shifted, as scholars began to observe the global, national and local forces that organised and shaped urban informal economic and political life. In an earlier work Lourenco-Lindell (2002) argued that there are multiple forms of regulation in the informal economy with multiple rules of regulation at play; multiple agents of regulation; multiple forms of sanctions and forms of struggle that regulate the informal economy. Some studies noted the role of social networks; social capital and informal institutions as key regulators of informal economic and political life (Roitman, 2004). Other scholars also began to highlight how these informal forms of regulation often intersected with the formal (in the form of global, local and national forces) (Guha-Khasanobis et al., 2006; Meagher, 2005; 2012). Recently, scholars are starting to rethink social order in the informal economy to highlight how closely enmeshed the formal and informal are (McFarlane, 2012) and hybrid regulation in the informal (Meagher, 2012; Meagher and Lindell, 2013). This is an important consideration for the urban informal economy literature because it highlights the dynamism and how blurry the lines are between the formal and informal.

In light of this, what is apparent is that regulation in the urban informal economy is heterogeneous, involves multiple actors, including the state, thus making it more complex than the dualists would have led one to believe. Although it offers a useful resource and highlights the complexity of how social order is constituted in the urban informal economy, its focus is exclusively on human-to-human exchanges. Very little is known about the role of non-humans in creating and contesting order in the urban informal economy. In response to this gap, I argue that informal activities

are regulated by hybrid modes of regulation that include assemblages of humans and non-humans. I also argue that non-humans play a key role in the regulation of the urban informal economy by creating and contesting social order. On a broader scale, scholars in urban geography and urban sociology have been engaging with the role of the non-human in the urban social (Amin, 2007). Yet in the urban informal economy debate there are only a few scholars engaging with the idea of assemblages of humans and non-humans in particular informal sectors as constituting urban social life. This implies that there is a need for empirical work that explores how assemblages of humans and non-humans regulate the urban informal economy. Given this need for more empirical work, it is important to include the non-human as a key actor (in ANT terms) in the analysis of how informal activities are regulated because it allows for a different understanding of regulation in the urban informal economy. It highlights that regulation in the urban informal economy is not only based on human social relations consisting of rules, norms, and institutions but is constitutive of assemblages that involve all actors (both human and non-humans). Omitting the non-human in the analysis of how informal activities are regulated not only provides a limited understanding of how these activities are regulated but it excludes actors that play a critical role in the regulation of urban informal activities.

## **1.2 Explaining Key Concepts**

This section provides an overview of the key concepts that were used in this study.

### *The meaning of 'informal'*

The concept of the 'informal' was first introduced by Hart (1973) in his work on income opportunities in Accra, Ghana. Although the concept, 'informal' officially appeared in the 1970s, the dualist idea underpinning its usage was not new. Before its official appearance in the literature, other terms that were used to highlight this distinction included: capitalist versus pre-capitalistic (Boeke, 1953); firm-centred versus bazaar economy (Geertz, 1963); urban versus rural sector (Harris and Todaro,

1970); and marginal versus modern sector (Rakowski, 1994). Since the 1970s the concept has received considerable attention by scholars as well as international organisations, such as the International Labour Organisation (ILO), the World Bank, and Women in Informal Employment: Globalizing and Organizing (WIEGO). Four decades later, in spite of considerable criticism and disagreement around the term, it continues to be widely used (Lindell, 2010b).

It has been applied in multiple ways in relation to urban labour, urban spaces and urban politics. McFarlane (2012) makes a useful distinction between the different usages of the concept and distinguishes between four different conceptualisations. For the purposes of this study, only three of these are relevant, as they speak to the notion of how social order is created or contested in the urban informal economy.<sup>1</sup> The first relates to characterising the informal as a spatial categorisation where it is territorialised within 'slum' settlements on the legal, political, economic, social and environmental margins of the city (McFarlane, 2012). This conceptualisation of the 'informal' was largely prevalent in earlier scholarship on informal housing. In this instance, slum settlements associated living on the margins of the city with being socially disorganised and distinct from the rest of the urban system (Mangin, 1967; Pamuk, 1992). In this instance, living in slum areas was associated with disorder and chaos.

The second relates to defining the informal as an organisational form. The central idea underpinning this conceptualisation is that the 'informal' is represented as unorganised and unregulated labour (McFarlane, 2012). The underlying assumption of this definition is that state law is the only form of regulation that regulates informal activities (Lourenco-Lindell, 2002). This definition is also highly prevalent in the context of informal waste studies (Wilson et al., 2006; Medina, 2007) where informal waste activities are represented as unregulated, unrecorded, labour-

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<sup>1</sup> The fourth definition relates to how the 'informal' materialises as a governmental tool where it is deployed as an organisational device that allows particular domains and forms of intervention (McFarlane, 2012). Although this definition also speaks to the notion of regulation it does not adequately capture the dynamism of how social order is constituted in the urban informal economy.

intensive, low technology, and low-paid work. Similar to the first conception of the informal, this definition also assumes that the informal is associated with disorder.

The third definition conceives of the 'informal' as a negotiable value (McFarlane, 2012). In this instance, the distinctions between formal and informal emerge in practice: if formality operates through fixing value, including the mapping of spatial value, then informality operates through the constant negotiability of value (McFarlane, 2012: 93). Working in this tradition, Roy and Alsayyad (2004) define the informal as an organising logic, a system of norms that governs the process of urban transformation and a series of transactions that connect different economics and spaces to one another. Roy (2005) elaborated on this definition and highlights that the 'informal' is represented as a 'mode' – a way of being. This definition of the 'informal' provides an alternative conceptualisation to the above mentioned definitions of the 'informal'. It recognises that the informal is regulated and embraces the idea that there are multiple forms of regulation in the urban informal economy.

With this in mind, the concept of 'informal' in this study is inspired by Roy and Alsayyad's (2004) conceptualisation, which views the informal as an organising logic, a system of norms that governs the process and a series of transactions that connect different economics and spaces to one another. Although this definition of the informal is largely used in relation to urbanization it can also be used in relation to informal economic activities because it offers an alternative that does not put the formal and informal at odds with one another. It embraces the complexity of how the informal is governed and how formal and informal actors often interlink and intersect in various ways. Lastly, it also does not assume that state law is the only form of regulation and embraces multiple modes of regulations (both formal and informal) that regulate the urban informal economy. For these reasons, the 'informal' in this study refers to an organizing logic that involves a series of transactions of economic and social activities that is governed by a combination of formal and

informal norms, rules, institutions and a variety of actors (both human and non-human) that connect different economies and spaces to one another.

*The meaning of 'informal waste activities'*

A wide range of terms is employed within the informal waste literature to refer to the people who extract materials from the waste stream (Samson, 2010) with very little attempt to define the actual activity. For this reason, I opted for a definition that defines the actual activities. I offer the following definition:

An activity of commodity extraction (extracting valuable materials), upgrading (sorting, cleaning etc. ), and trading of recyclable materials carried out on a small to medium scale using labour intensive techniques (adapted from Scheinberg et al., 2011 and Haan et al., 1998 in Zia and Devadas, 2008).

This definition is appropriate because it refers to specific functions pertaining to informal waste activities. It also illustrates that there is an organising logic that involve a series of transactions that connects the formal and the informal as well as the human and non-human entities.

*The meaning of 'informal waste collector'*

Various terms are used throughout the world to refer to individuals who engage in the informal recovery of waste. Latin America, in particular, is rich in terms with nearly every country in its region ascribing a different term to those collecting waste informally (Medina, 2007). Africa and Asia too are equally rich in the terms it ascribes to the activity. However, terms, such as scavenger and waste picker have become common in referring to this activity. The term 'scavenger' has been criticised as being derogatory while other terms like 'waste picker' is considered too narrow because it does not capture the nature or importance of the labour being performed (Samson, 2009; 2010).

In South Africa, a number of different terms are used to refer to individuals who collect, sort and trade recyclable materials for an income. Individuals who



engaged in this activity on landfill sites are referred to as waste pickers (Charmane, 2009); waste salvagers (Chvatal, 2010); and reclaimers (Samson, 2012). Those operating on the streets are referred to as trolley pushers (McLean, 2001); micro-scale collectors (Langenhoven and Dyssel, 2001); reclaimers (Samson, 2008; Benson and Vanqa-Mgijima, 2010) and street waste pickers (Schenck and Blaauw, 2011; Viljoen, Schenck, and Blaauw, 2012; Viljoen, Schenck, and Blaauw, 2015). Of all these, none really gives a rationale for using the names except for Samson (2008; 2012). Samson's (2012) critique of terms such as waste picker, trolley pusher, salvager and so forth is that these terms do not capture the essence of the activity. She prefers the term 'reclaimer' as it captures the essence of the activity and highlights the pro-active, creative aspects of this activity, as people decide how they think an item should be valued. While, I do not dispute Samson's (2012) usage of this term, it is also problematic because it assumes that all informal collectors appropriate spaces as political actors. While this was true for reclaimers on a Soweto landfill site (Samson, 2012), the same assumption cannot be applied to those operating on the streets. The term 'reclaimer' also assumes that informal collectors are a uniform category. This is also problematic because my research shows that informal collectors differed in terms of what and where they collect, and therefore, how their work is organised.

In this study I propose that terms referring to informal waste collectors should be a matter of empirical investigation; to find out and use the terms that such individuals ascribe to their activities instead of adopting terms that have been applied elsewhere in the world. For this reason, I employ collective terms as well as individual terms to refer to those collecting waste on the streets of Cape Town. Collectively, they are referred to as 'informal waste collectors' as they collect waste in various ways and spaces across the city. Other terms such as '*skarelaar*', '*cartie*' and '*bakkie brigade operator*' also form a key part of the analysis of the thesis. These names were used by the different types of informal waste collectors to refer to themselves and ascribe meaning to their daily activities. Although terms such as *cartie* or *bakkie*

*brigade operator* provide no indication of what is on the cart or the *bakkie* they are essential as these non-humans have cultural and financial significance.

### *The meaning of 'regulation'*

The concept 'regulation' has been used in different ways by different disciplines. It is highly contested and has been employed for a myriad of discursive, theoretical and analytical purposes (Levi-Faur, 2011). Black (2002a) has distinguished between functionalist, essentialist and conventionalist definitions of regulation. The functionalist definition is one of the most common definitions of regulation and relates to the function that regulation performs in society (Black, 2002a; Levi-Faur, 2011). This definition of regulation is usually applied in a relation to public entities and has the state as its main actor (Black, 2002a).

The essentialist definition of regulation asserts that regulation is a form of action (Black, 2002a). It identifies elements that have an analytical relationship to the concept of regulation. For instance, it looks at the way in which the concept is used in practice and what characteristics are ascribed to it by those using it. Key to the essentialist definition is that the activity of regulation is open for empirical verification. It also does not assume that regulation is performed by the state (Black, 2002a). This definition of regulation is largely applied in regulation studies (see for e.g. Braithwaite and Drahos, 2001; Levi-Faur, 2011).

In contrast to the above two conceptualisations of regulation, a conventionalist definition focuses on how the concept is used in practice (Black, 2002a). The main idea underpinning a conventionalist definition of regulation is that regulation emerges as a result of social practices in a particular context (Tamanaha, 2000). This definition is employed in legal pluralist studies that advocate for a conventionalist approach to understanding legal pluralism (for e.g. Tamanaha, 2000).

A fourth definition offered by Julia Black (2002a) is that of decentred regulation. In this definition Black (2002a) moves away from the previous

definitions of regulation and offers a wider ranging conception of regulation. She defines regulation as the intentional activity of attempting to control, order, or influence the behaviour of others (Black, 2002a). One of the main reasons for offering a decentred conception of regulation is to decouple the activity from one particular actor, like the state, and to shift it to other actors outside the parameters of the state. In this way, non-state actors are also acknowledged as playing a role in controlling and influencing the conduct and behaviour of others (Black, 2002a). The decentred definition of regulation has been applied in a number of regulation studies to demonstrate how non-state actors also control and influence the behaviour of other actors (for e.g. McNaughton and Botterill, 2009).

In light of this, the concept of regulation that is deployed in study is in line with a decentred understanding of regulation. Although, Black's (2002a) definition is largely employed in studying multinational corporations and organisations, it is useful in the context of the urban informal economy. In sum, in this study regulation refers to the intentional activity of attempting to control, order, or influence the behaviour of others. This definition is particularly useful because it does not put the state at the centre of regulation or consider it as the main regulator and enforcer of regulation. It is also useful because it does not assume who, what and how regulation is carried out. Lastly, because of its key feature, that is to recognise plurality or the multiplicity of actors and institutions, this definition can also be extended to recognise actors beyond the human scope to include the non-human. In light of this, a decentred conception of regulation makes more sense for understanding how informal activities are regulated because it does not assume the state to be the main regulator and offers the space to empirically explore how regulation is carried out. For these reasons, this conception is the most appropriate fit for answering the research question in this study.

*The meaning of 'assemblage'*

This concept derives from the work of Deleuze and Guatarri (1987) and has been applied in a myriad ways in different disciplines. Broadly speaking, the concept refers to how heterogeneous elements or objects come together (McFarlane, 2011a). For the purposes of this study, I work with this broad idea of assemblage and employ it as a metaphor to show how the human and non-human come together to enable or constrain informal activities. The idea of assemblages have not gained much attention in the urban informal economy literature with the exception of the following scholars; Simone (2004, 2008, 2011) have employed the term in its general form to show that the everyday lives of those in the urban informal economy is constituted by heterogeneous factors; McFarlane (2011a) adopts a Deleuzen conception of assemblages to show the heterogeneous elements that constitute urban dwelling and space; Dovey (2012), in her study of informal urbanism in Southeast Asia, also adopts a Deleuzen conception of assemblage and argues that the idea of assemblage allows for re-thinking the formal/informal framework. From these applications of the idea of assemblages in the context of the urban informal economy it is clear that there is a shift towards highlighting the heterogeneous elements that are at play in the daily lives of those operating in the informal economy. This is important because it shows how enmeshed the formal and informal actually are.

In light of this, the concept of assemblage is applied in its general form, focusing on how people and things come together to create or contest social order. Applying the concept in this manner is useful because it allows one to move beyond the dichotomous thinking and depict a comprehensive view of how informal activities are regulated in the urban informal economy. It also allows one to recognise the plurality of actors and the role these play in creating and contesting social order and it also allows one to view the process of social order, which is constantly in the making. Lastly, it allows one to view regulation in the urban informal economy as constitutive of human (actors, rules, norms, institutions) and non-human (transport, waste materials, storage facilities and so forth) entities. Based on this, adopting this specific conception of assemblage in this study makes more

sense to understand how informal activities are regulated in the city because a) it offers the scope to explore the heterogeneous factors that make up the urban informal economy and b) it allows one to explore how informal activities are regulated without presuming dualisms between human and non-human and formal and informal.

*The meaning of 'non-human actors'*

The concept of non-humans derives from Actor Network Theory and refers to any material object, thing or animal that plays a role in social life (Latour, 2005). For ANT scholars, non-humans are not just things but can be considered as actors or actants (Latour, 2000; 2005). The notion of non-human as actors has been applied widely, including in studies on science and technology; political ecology; human geography; and urban sociology.

One of the key ways in which it has been applied in urban sociology in particular is to show that the social order in the city is constitutive of assemblages of human and non-human actors (Amin, 2007). Given that social order is not only limited to humans in the city, the same idea could be extended to the urban informal economy. In this instance, social life in the urban informal economy is not just human but includes the non-humans that form part of the daily informal economic and political life. Here the non-human, including the built environment, nature, technology, and infrastructure can be theorised as constitutive of the social in the urban informal economy (Amin, 2007). The purpose of including the non-human as part of the social in the urban informal economy is not to put the humans and non-humans at odds with one another but rather to show the constitutive – human and non-human actors that organise informal economic and political life.

In the context of this study, the non-human refers to any material object or animal that is necessary to carry out informal waste activities. It includes the different forms of transport such as trolleys, carthorses, and *bakkies* as well as the different forms of storage facilities such as skips, bale bags, old baths and so forth. In

this study, these non-humans are not just mere resources or equipment that are necessary to carry out informal waste activities, such as sorting, separating, transporting and storing waste material, but are considered as key actors that makes a difference in their own right in the daily activities of informal waste collectors in Cape Town. Looking at these non-humans as key actors in the daily activities of informal waste collectors is important as it provides a comprehensive account (see comments above) of how informal activities are regulated, by shifting the attention from the exclusivity of the human actor to include non-humans. Another reason as to why the non-human should be considered as an actor in the analysis of how informal activities are regulated is because it gives insight into the heterogeneous relations in the urban informal economy, by drawing our attention to how humans and non-humans are entangled.

In summary, this thesis seeks to conceptualise the regulation of informal activities through assemblages. This approach allows for a view of who regulates, what is regulated and how regulation is carried out, without subscribing to a specific idea of who ought to regulate. These concepts provide a framework for describing the complex net of regulation in the urban informal economy– how the human and non-human are entangled in various ways. It takes into account the multiplicity of relations and actors rather than putting them at odds with one another.

### **1.3 The Research Problem**

As discussed earlier, while the urban informal economy literature draws attention to the multiple arrangements and institutions that regulate and govern informal activities in the city (Lindell, 2010b, Meagher, 2010b), it largely overlooks the role of non-humans in its analysis. In the instances where it has been mentioned it is considered as resources, equipment or physical objects that have no effect on how social relations are structured and organised. As a result, non-humans are often pushed into the background and are obliterated as the conflicts or opportunities that occur around it or as a result of it take centre stage in the analysis (Brown, 2006). This is evident in a large body of literature on social capital in the informal economy

where non-humans are often seen as capital or assets that have no effect on social order or practices in the urban informal economy.

In light of this, what is apparent is the need to move beyond the exclusive focus on humans in social order in the urban informal economy to include non-humans in its analysis. In response to this gap, this study includes the non-human in its analysis and considers the multiplicity of social relations that includes humans and non-humans and how this regulates informal economic and political life. In doing so, this study looks at a particular type of informal activity – informal waste activities, and pays specific attention to the role of non-humans as regulators and how these organise spaces and enable or constrain support networks.

#### **1.4 The main argument**

Overall, this thesis argues that informal activities, particularly informal economic activities, are regulated by assemblages of humans and non-humans. Consequently, this thesis argues that non-humans are key actors that actively participate in enabling or constraining the daily activities of informal actors. In this sense, non-humans play an important role in organising the spaces where informal activities are carried out. They also play an important role in how informal actors build alliances in support networks. In this way, informal activities are regulated by a complex mix of rules, norms, and arrangements that reject the human-nonhuman divide.

#### **1.5 Research Questions**

Following this line of thought, the key arguments in this thesis respond to the following main research question: *How are informal activities regulated in the city?* It uses informal waste collectors as an example to empirically unpack this question. The empirical question that follows from the main question is: *How are informal waste activities regulated in Cape Town?* This question is further broken down into a series of three sub-questions that will each be answered in a separate analysis chapter:

- What is the role of non-humans in informal waste activities?

- How do non-humans organise workspaces?
- How do non-humans enable or constrain the support networks of informal waste collectors?

The aim of this main research question is to gain a better understanding of what regulates informal activities in the city. Of particular interest to this thesis is how regulation is constituted through the multiplicity of social relations and practices in the urban informal economy. Much has been written about the various institutions, rules, norms, and governance arrangements that regulate the urban informal economy. However, the emphasis is mainly on the role of the human in organising social relations with the role of the non-human being largely overlooked. While the importance of the role of the non-human is emphasised in this study, the idea is not to put the human and non-human at odds with one another but rather to draw attention to human and non-human assemblages that regulate the urban informal economy. In doing so, this thesis seek to contribute to this conversation by exploring the role of the non-human in regulating social relations in the urban informal economy.

## **1.6 The Cape Town Case**

To engage with this main research question this study focuses on a case study of informal waste collectors in Cape Town. Cape Town, lovingly referred to as the 'Mother City', is one of the most beautiful cities in South Africa and is a popular tourist destination. It is the second largest metropolitan area in South Africa and is located on the southern peninsula of the Western Cape and accommodates 66% of the total population of the Western Cape (City of Cape Town, 2011a). Using racial categorisation first defined by the apartheid government yet continued by the present dispensation, the Coloured population accounts for 42, 4% of the population



followed by Blacks at 38, 6% and Whites and Asians comprising 15, 7% and 1,4% respectively.<sup>2</sup>

After Johannesburg, Cape Town makes the second largest contribution to the national economy in 2010. It is the economic hub of Western Cape and has consistently contributed between 71% and 75% of economic output, as measured by gross value added (GVA) to the provinces' economy (City of Cape Town, 2011a). The majority of the city's economy is driven by small, medium, and micro enterprises (SMMEs).<sup>3</sup> The economic make-up of the city is well-diversified and constitutes a range of industries, including manufacturing, agriculture, construction, finance and business services, and retail. The biggest contribution to the city's economy comes from the finance and business services (City of Cape Town, 2011a). The finance, insurance, real estate and business services industry is one the largest employers and is also the largest employer of highly skilled and skilled labour. Wholesale and retail trade, catering and accommodation are the city's largest employers and employ more unskilled and semi-skilled workers than any other sector. In 2010, 82.8% of the total number of employed persons worked in the formal sector, with 10.6% in the informal sector (City of Cape Town, 2011a). The informal sector in Cape Town is divided into trade and services sectors that include a broad range of informal activities, such as hawking, vendors, *spaza* shops, waste collection, traditional healers, funeral services, and so forth (Western Cape Provincial Treasury, 2013).

However, the city is also criticised for functioning as a 'starkly polarised city' dominated by the juxtaposition of very affluent suburbs alongside poverty-stricken and overcrowded settlements located at the edges of the city (Turok, 2001; Lemanski, 2007). Those operating in the informal economy often come from these areas. In the case of informal waste collectors, the majority of those engaging in this activity are

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<sup>2</sup>Available:

[http://www.capetown.gov.za/en/stats/Documents/2011%20Census/2011\\_Census\\_Cape\\_Town\\_Profile.pdf](http://www.capetown.gov.za/en/stats/Documents/2011%20Census/2011_Census_Cape_Town_Profile.pdf) [2013, October 31]

<sup>3</sup> City of Cape Town. no date. Cape Town – a force to be reckoned with Available:

<https://www.capetown.gov.za/en/ehd/Pages/EconomicStatistics.aspx> [2014, April 14].

poor and unemployed and include individuals who are homeless or living in informal settlement areas across the city. Since landfill picking is prohibited in Cape Town, informal waste collectors source their waste from household wheelie bins placed on the sidewalks on municipal waste collection days. As a result, informal waste collectors are mobile and move around the city, often crossing boundaries in this polarised city. One of the main reasons for crossing the boundaries is that most of the valuable waste is found in the waste bins of affluent and middle class suburbs in the city.

In light of this, why does this study choose to focus on informal waste collectors in Cape Town? Firstly, given its stark polarity, Cape Town offers an interesting site to explore how informal activities are regulated. Secondly, unlike elsewhere on the continent, informal collectors in Cape Town operate alongside an innovative and effective waste management system, which makes their situation an interesting and peculiar one. The City of Cape Town (CoCT) solid waste management practices are one of the best in the country and they are considered as the leaders in the region. This is evident in the waste management policies, practices and world class waste management infrastructure in the city. For this reason, informal waste collectors in the city do not engage in cleaning the city like elsewhere in developing countries but engage mainly in extracting recyclable materials from domestic or household waste. Informal waste activities occur in various ways, ranging from rummaging through waste bins on waste collection days to collecting recyclable materials from commercial premises. Because of this phenomenon there are multiple formal/informal arrangements, institutions, rules, and norms that regulate informal waste activities.

Additionally, very little is known about what enables or constrains the work of informal waste collectors in this specific context. The few empirical studies that do focus on this area of study broadly focus on the working and living conditions of those working on the streets, their relationships with buy-back centres, and collective organising initiatives (Engledow, 2005; Langenhoven and Dyssel, 2007;

Ferrara et al. 2008; Benson and Vanqa-Mgijima, 2010; Tischler, 2011; Viljoen et al., 2012; Viljoen, 2014). Therefore, these studies do not give an extensive account of the modes of regulation that regulate informal waste activities and do not situate their activities in the broader regulatory context nor pay attention to the implications this has for their work.

With this in mind, the study is based on a qualitative research design, employing a grounded theory approach. The bulk of the data was obtained through a triangulation of participant observation, semi-structured interviews, audio and visual materials, social media, and documentary analysis.

### **1.7 Contribution of the thesis**

Following the above methodological approach, this study is able to make empirical as well as theoretical contributions to the urban informal economy literature. This methodological orientation ensures the thesis is able to make a number of interesting contributions to the literature.

First, the study goes beyond the majority of empirical work on street waste pickers (Langenhoven and Dyssel, 2007; Benson and Vanqa-Mgijima, 2010; Tischler, 2011) in Cape Town that consist of studies that treat informal waste collectors as a uniform category to illustrate that informal waste activities vary according to where they operate and how their work is organised. It also situates informal waste collection in the waste management landscape of the city and demonstrates that informal waste activities are regulated by multiple arrangements and assemblages—formal/informal and human/non-human. These arrangements and assemblages have important implications for how informal waste activities are regulated on the streets of Cape Town.

In addition, the study also contributes to the broader discussion of street waste pickers in South Africa (Samson, 2010; Schenck and Blaauw, 2011; Viljoen et al., 2012; Viljoen et al., 2015) by providing an empirical analysis of what enables or constrains their work on the streets. In doing so, the study shifts the focus from the current

focus on socio-economic conditions of street waste pickers and value chain relations (street waste picker's relationship with buy-back centres) to the relationship between informal collectors and the non-humans that are necessary to carry out their daily activities and the active role these non-humans play in regulating informal waste activities. In doing so, these empirical contributions also allow the thesis to draw theoretical conclusions relevant to the ongoing debates concerning urban informal economies.

Beyond the empirical contributions, this study mainly contributes to the urban informal economy literature. By focusing on the non-human as a key actor (in Actor Network Theory terms) in its analysis of how the informal activities are regulated, this study contributes to the urban informal economy literature in the following way. The study demonstrates that the urban informal economy is regulated by multiple relations that include both humans and non-humans. In doing so, the thesis contributes to the current understanding of what regulates the urban informal economy.

By including the non-human in the analysis of how the urban informal economy is regulated, it has the following implications for this body of literature. First, it implies that 'things' or resources (as it is often referred to in the literature) make a difference in their own right. This has implications for how agency is conceptualised in the urban informal economy literature. Although there are various conceptualisations of agency in the urban informal economy literature (see for e.g. Appadurai, 2001; Bayat, 2000; Simone, 2004; Lindell, 2010a) it is largely human-centred. This study expands the idea of agency in the urban informal economy by providing an empirical analysis of how agency is distributed across the human-non-human divide.

Second, focusing on the non-human as an actor also contributes to how physical spaces, particularly workspaces in the urban informal economy, are conceptualised. This study demonstrates that these spaces are produced by how formal/informal

and human/non-human actors interact. In this sense, the workspaces are organised by how these multiple human and non-human entities interact and intersect with one another. Recent studies by Dovey (2012), McFarlane (2011a) and Simone (2008, 2011) suggest that spaces in the urban informal economy are constitutive of multiple relations including human – non-human relations. Here, this study provides further empirical support through a focus on human-non-human relations in the informal waste economy.

Third, it also sheds light on how alliances are forged in support networks. By deploying an ANT concept such as enrolment as a framework of analysis this study expands the current ideas of Lourenco-Lindell (2002) on ‘politics of support mobilisation’ and Cleaver, Franks, Maganga and Hall (2013) on *bricolage* as modes of mobilising resources. This study demonstrates that not only do informal waste collectors engage in assembling various social relations (institutions, rules, actors) but they are also involved in assembling human-non-human assemblages in order to mobilise resources. In doing so, this study expands the idea of networks in the urban informal economy and the nature of its heterogeneity.

Finally, this study also endeavours to contribute to regulation studies inspired by recent work of Cloatre and Dingwell (2013) that highlight that there is a need to understand regulatory entities and activities beyond those represented by institutions and the work of official and supranational agencies. This study empirically demonstrates that the net of regulators and ‘regulatory spaces’ are widening through assemblages of humans and non-humans. In doing so, the study seeks to close this gap in regulation studies by drawing attention to the regulatory role of non-humans in the regulatory processes.

## **1.8 Structure of the thesis**

The overall structure of this thesis takes the form of eight chapters, including this introductory chapter. Chapters Two to Four provide a background to the study, its relevant literature and methodology. Chapter Two, *Modes of Regulation in the*

*Urban Informal Economy* places the study into the context of current debates in order to analyse and discuss how informal activities are regulated. In doing so, it identifies four modes of regulation that highlight the heterogeneous character of regulation in the informal economy. This chapter argues that the current debates are mainly focused on the human and its role in shaping social relations in the informal economy. Consequently, it overlooks the role of the non-human in shaping social relations in the informal economy. It identifies three areas in the literature where the role of the non-humans has been overlooked, which forms the basis for the substantive chapters.

Chapter Three, *Researching informal waste collection in Cape Town* focuses on the methodology. It positions the study within a qualitative approach that utilises a case study methodology and grounded theory approach. It also discusses the various methods that have been employed and reflects on the role of the researcher in the study.

Chapter Four, *Modes of Regulation in the Informal Waste Economy: The Cape Town Case* contextualises informal waste collectors through discussing who they are, what their role is and how their work is regulated in the city. It draws on international debates to demonstrate that there are various modes of regulation in the informal waste economy. Following this discussion, it looks at the modes of regulation at play broadly in the South African context and more specifically the Cape Town context. It argues that informal waste collectors on the streets of Cape Town are regulated by multiple formal and informal arrangements as well as human and non-human assemblages that go beyond the purview of the state.

Chapters Five to Seven present the main findings of this thesis with respect to the three sub-research questions in order to address the central question of how informal activities are regulated. Each chapter draws upon empirical data to identify and unpack this central question. Chapter Five, *Non-humans as 'regulators': the role of non-humans in informal waste activities* looks at what the role of non-humans in

informal waste activities is. In doing so, it explores how different forms of transport, such as trolleys, carthorses, *bakkies* and storage facilities affect the work of informal waste collectors. It considers these non-humans as regulators that actively create and contest order on the streets of Cape Town. This chapter argues that these non-humans are not mere objects or resources that are necessary to carry out waste activities but are key actors that organise how informal waste collectors interact with other actors. It also argues that non-humans have agency and make a difference in their own right in the daily activities of waste collectors. In doing so, this chapter demonstrates how the agency of non-humans emerges from negotiations, arrangements and contestation between waste collectors and other actors.

Chapter Six, *'Regulatory spaces' in the informal economy: Organising workspaces of informal collectors*, looks at how non-humans organise workspaces for waste collectors. It examines how the workspaces of informal waste collectors are organised in the city. This chapter employs the 'regulatory space' metaphor to analyse how waste activities are disrupted or sustained at various workspaces across the city. In doing so, this chapter expands the notion of 'regulatory space' to include non-human regulators. It argues that workspaces are not mere physical places where waste collectors carry out their work but is rather actively organised and assembled by human and non-human entities. It also argues that this process is iterative: workspaces are organised by assemblages of humans and non-humans, which in turn organise workspaces. This chapter demonstrates that the current understanding of how spaces are organised in the informal economy is limited because it leaves the non-human out of its analysis.

Chapter Seven, *Mobilising resources through enrolment* focuses on how non-humans enable or constrain the support networks of informal waste collectors. It looks at the role of non-humans and their role in forging alliances in support networks. It employs an enrolment analysis to examine how informal collectors mobilise resources. This chapter analyses the experiences of waste collectors in order to describe and evaluate the strategies informal collectors employ to mobilise

resources. In doing so, it highlights different techniques of enrolment and discusses how these are contested, put informal waste collectors in a precarious situation, and marginalise their work. This chapter argues that, in order to understand how resources are mobilised in support networks, it is necessary to pay attention to the micro processes of constructing alliances. It also argues that the process of building alliances in support networks involves both humans and non-humans. This chapter demonstrates that the process of mobilising resources in support networks involves the constant assembling of humans and non-humans in various ways.

Finally, Chapter Eight, *Towards a heterogeneous understanding of regulation in informal economies* draws the findings together and reflects on the broader insights for the urban informal economy scholarship and other relevant literature. It starts off with a review of the main research findings. Next, it discusses the significance of the empirical findings and highlights the key contributions it has to offer for relevant literature. In doing so, the chapter argues that informal activities are regulated by assemblages of humans and non-humans. Finally it discusses suggestions for further research.



## **Chapter Two: Modes of Regulation in the Urban Informal Economy**

### **2.1 Introduction**

“...the fact that informal activities lie outside the state regulatory system does not mean that they are ‘unregulated’. Rather relations in the informal economy are regulated through a multiplicity of rules, institutions and a variety of actors beyond the state” (Lindell, 2010b: 5).

This quote adequately captures the heterogeneous nature of the modes of regulation in the informal economy. However, its underlying assumption is that social interactions and relations in the informal economy are primarily human-to-human exchanges. Because of this assumption, what is not human has been cast as objects, resources, physical capital or assets that have little impact on social interactions and relations in the daily lives of informal actors. As a result, the non-human – including built environment, technology, infrastructure, animals - does not feature in the analysis of what regulates the informal economy. With this in mind, this thesis seeks to make a contribution to the current understanding of what regulates the urban informal economy. It suggests that the role of the non-human in shaping social interactions, relations and practices in the informal economy are largely overlooked in the literature.

Mindful that the evolving scholarship on the urban informal economy encompasses different schools of thought (see Chen, 2005, 2012), this chapter sets the context by outlining the key perspectives on how informal activities are regulated. It does so by focusing on four modes of regulation, namely social capital, informal institutions, social networks and hybrid governance arrangements. Taken together these perspectives form the foundation for this study of how informal activities are regulated.

Following this introduction, this chapter is divided into three sections. The next section gives an overview of the key perspectives of how informal activities are regulated. It is largely descriptive and provides a background for section 2.3.

Building on the previous section, section 2.3 identifies three areas that need more attention in the literature, which directs the flow of subsequent analysis. Section 2.4 concludes this chapter.

## **2.2 Theoretical Perspectives on the Modes of Regulation in the Informal Economy**

Disciplines such as sociology, anthropology, urban planning, and political science have all reflected upon and interpreted the developments of informality and informal economic behaviour in relation to wider economic, political and societal developments. Mindful of this emerging and evolving scholarship, this section sets the background for the remainder of the chapter by outlining four key perspectives that theorise how informal activities are regulated.

### ***2.2.1 Social Capital***

Social capital has its roots in several theoretical traditions and has received considerable attention across the social science discipline. Many of the writings on social capital have focused on definitions (Portes, 2000; Adler and Kwon, 2002), measurement issues and consequences of social capital (Onyx and Bullen, 2000; Putnam, 2001), and the generation of social capital (Hooghe and Stolle, 2003). Despite the considerable amount of attention that social capital has received in the literature it is scholars like Pierre Bourdieu, James Coleman and Robert Putnam that have made considerable contributions. Bourdieu (1986), from a class perspective, argues that people maintain and sustain power through social capital, while Coleman (1988) argues that social capital is one form of capital amongst many others upon which people rely. Putnam (1993), not very far off from Coleman (1988), argues that social capital is the norms of trust and values that organise social interactions. From these three scholars it is the work of Coleman (1988) and Putnam (1993) that informs a large body of literature on the informal economy, with the exception of a few studies employing Bourdieu (1986), in their discussion on social capital. One of the key issues that emerge from this growing body of literature on

social capital is that it plays an important role in organising and establishing economic, social and political life in the informal economy. The central tenet of social capital – norms of reciprocity, trust, and values – is that it enables people to act collectively. With this in mind, this section explores how social capital regulates informal activities from a political studies perspective and sociology perspective.

The first category of literature that speaks to how social capital regulates informal activities falls under the auspices of political studies. In the context of political studies, social capital in the form of reciprocity, trust, norms and values determine how citizens relate to each other in order to achieve democratic goals (Fukuyama, 2001). From this perspective there are two views of how social capital regulates social relations. The first view stems from the work of Putnam (1993a, b) and highlights that social capital enables collective action in order to achieve democratic goals. A large amount of studies on the urban informal economy adopt a Putnamian view of social capital to discuss informal governance processes. This view is particularly evident in discussions of informal governance as a function of social capital (Meagher, 2010a). For instance, scholars who represent informal governance processes as a function of social capital show how it provides an institutional framework for collective action by setting agendas, mobilising resources, formulating norms and expectations (Tati, 2001). The Putnamian view of social capital in informal governance processes have been critiqued because it says very little about the problems of internal democracy and internal power structures in informal and voluntary associations (Beall, 1997a, b, 2001; Siisiäinen, 2000; Meagher, 2010a).

While the first view of how social capital regulate informal activities focused on the micro relations in achieving democratic goals, the second view of social capital in the political science tradition emerges from the non-state governance perspective. This view considers social capital as the vehicle for ‘governance without government’ (Peters and Pierre, 1998; Findlay, 2014). In this instance, social capital provides a regulatory framework for how people co-operate or collaborate in the

absence government and the market. The next category of literature that speaks to how social capital regulates informal activities falls under the auspices of sociology. Hooghe and Stolle (2003) pointed out the following a key difference of social capital in the political and sociological tradition: unlike political studies that largely treat social capital in terms of its larger societal benefits and its role in achieving democratic goals, the sociological tradition focuses on the social benefits for both individuals and groups (Hooghe and Stolle, 2003). This difference is critical for understanding the various types of social relations that regulate informal activities. From the sociological tradition, social capital emerged in two ways: the first focus on social capital of the individual looks specifically at how individuals access and mobilise resources to attain personal goals. The first view stems from the work of Lin (1990) and Coleman (1988, 1990), which derives social order from individual dynamics. Coleman (1988) argues that social capital facilitates or constrains social action. In doing so, he highlights three forms of social capital that facilitate social action; obligations, expectations and trustworthiness of structures; information channels and norms; and effective sanctions (Coleman, 1988).

The Sustainable Livelihood Approach (SLA) further expands the notion of social capital as a benefit for the individual. This is evident in the definition of social capital that the SLA framework adopts. Under this framework, social capital refers to the social resources upon which people draw in pursuit of their livelihood objectives (DFID, 1999:9). A large number of studies employ this approach in livelihood research in order to examine the capacity of individuals to effectively mobilise and combine both tangible and intangible resources. Some empirical examples on street trading show how individual traders, operating in the informal economy, draw on various networks of personal ties in order to mitigate negative trends and shocks (Moser, 1995; Lyons and Snoxell, 2005a, b). The empirical studies on waste picking make similar observations (Brechtbühl, 2011; Didero, 2012). Interestingly, the SLA framework makes reference to 'things' and discusses the importance of it for improving livelihoods. However, the discussion remains at the

level of referring to 'things' as physical resources or assets that do not have any agency.

The second view on social capital that emerges from the sociological tradition focuses on groups or collective actors. It considers how the participation in groups and associations enhance collective goals. It considers the group dynamic of social capital by looking at the role of social capital in enabling or constraining participation in groups and associations. Some studies have shown how social capital enabled collaboration in informal groups or associations: reciprocal relations enables information gathering, assessing reliability, continually monitoring one another (Anthony, 2005); it facilitates access to opportunities; and it creates incentives (Besley and Coate, 1995). While the different forms of social capital enable groups or associations it also constrains groups or associations in the following ways: it creates power centralities (Beall, 1997b); it creates social and political exclusion (Meagher, 2006, 2011). In addition to enabling or constraining participation in various ways, social order in groups is also maintained in various ways. One of the ways to ensure that trust is not abused is through deploying collective sanctions or social sanctions. Sanctions in the forms of ostracism, ending relationships, applying social pressure or shaming play an important regulative role. This is particularly evident in empirical studies on informal entrepreneurial networks (Peng, 2004); rotating savings and credit associations (Lyon, 2000, 2005; Gugerty, 2007; Anderson, Baland and Moene, 2009). Another way of maintaining social order in networks and associations is through reputational mechanisms or penalties, where loss of reputations prevents individuals from participating in other activities (Biggart, 2001; Anderson and Baland, 2002).

Beyond the scope of the informal economy, there is a vast body of literature on social capital and its role in creating and maintaining social order. For instance, some studies on environmental governance found that social capital plays an important role in fostering collaboration and cooperation between various actors (Adger, 2003); ensures compliance with rules and keeps down monitoring costs

(Pretty, 2003; Grafton, 2005). Other studies on health governance show that social capital increases likelihoods of adopting healthy norms of behaviour (Veenstra, 2002). Another example of social capital is that of creating and maintaining social order that emerges from non-state policing studies (Baker, 2005a, b).

In summary, social capital has made a key contribution to understanding what enables or constrains collective action in the informal economy. From the above discussion the following key observation becomes apparent around the issue of how social capital regulates informal activities and more broadly social relations: the discussion shows that social capital regulates how individuals and collectives engage with each other. In doing so, it draws attention to the individual or the collective as agents in organising social relations. Although this discussion offers a heterogeneous account of how social relations are regulated, the role of the non-humans is largely neglected. When non-humans feature in the debate of social capital it is treated as resources, assets, or capital that have no agency. The next section discusses how informal institutions as a mode of regulation regulate informal activities.

### ***2.2.2 Informal Institutions***

The next category of literature that relates to how informal activities are regulated emanates from political science, economic anthropology and institutional economics. It is largely concerned with the rules, norms and values that regulate informal activities. Although informal institutions are often used interchangeably with concepts such as social capital and social networks, it differs in that it focuses on institutions and is not just a mere form of organisation as are these concepts (Meagher, 2007b). Informal institutions regulate informal activities through the unwritten codes embedded in social practices (Bratton, 2007). It has made a significant contribution to understanding how informal activities are regulated by drawing attention to the multiple actors, rules, norms and values that regulate and the social practices that enable or constrain behaviour. The notion of informal institutions and its definitions (Helmke and Levitsky, 2004), its role in development

(Jütting et al., 2007; Williamson, 2009) have been well discussed elsewhere. For the purposes of this chapter, two views of informal institutions and how each regulates informal activities will be discussed.

The first category of literature that relates to the role of informal institutions in regulating informal activities falls under auspices of new institutionalism. It focuses specifically on norms as a key device for the regulation of social interactions (North, 1990). The work of North (1990) is well cited in the context of the informal economy when discussing the importance of informal norms in governing informal activities. It is also commonly referred to as 'rules of the game' (North, 1990; Berner, 2001; Hodgson, 2006). The 'rules of the game' regulate informal activities through various regulatory mechanisms. In the context of informal housing some studies highlight the following regulatory mechanisms that govern informal activities: informal rental agreements (Thirkell, 1996); and regulation of conflict through negotiation and territorial divisions (Mahitome, 2009).

The second category of literature on how informal institutions regulate informal activities emanates from political science. In the context of political science, the term 'informal institutions' refers to the unwritten rules that structure political life, which are created, communicated and enforced outside of officially sanctioned channels (Helmke and Levitsky, 2004; Hyden, 2006; Bratton, 2007). There is a growing body of literature on the role of informal institutions in shaping political life in Latin America, Asia, and Africa. Within this growing body of literature there are three views of how informal institutions organise political life that are of relevance for this chapter. The first view relates to the role of trust as a social mechanism that is immediate and relies on unwritten rules in use. Here the work of Hyden (2006) and his notion of 'economy of affection' are particularly relevant. It refers to the various reciprocal relations individuals enter into, in order to attain or achieve their goals. Hyden (2006: 10) argues that these various types of reciprocal relations is organised by informal institutions in the following manner:

- a) actors share a common set of expectations;
- b) they rely on forms of reciprocity;
- c) rules are unwritten but understood by each actor;
- d) exchanges are non-contractual and non-specified in time;
- e) it is implemented confidentially with no attention to objectives or methods;
- and
- f) self-enforcement occurs in case of a breach of perceived agreement.

In addition, Hyden (2006) also highlights four informal institutions that are central to the 'economy of affection' - clientelism, pooling, self-defence, and charisma. From these four institutions, clientelism is pertinent and shapes how informal economic activities are regulated. For example, Bratton (2007), in his study of the institutionalization of democracy in Africa, found that three informal institutions - clientelism, corruption and trust - shaped perceptions of democracy. Other examples of how clientelism has regulated informal political life include studies of patron client relationships and how it shapes local politics in informal settlements (Harris, 2005, 2007); the role of clientelistic relationships in the distribution of public goods and resources (Bénit-Gbaffou, 2011); the role of patron-client relationships in regulating tenure and access to public space (Pratt, 2006; Donovan, 2008); and regulating access to waste (Furedy, 1990; Rouse, 2006).

The second view of how informal institutions organise political life relates to how informal institutions shape power relations. This view is concerned with the institutional logic, with a focus on the institutions and its practices, which operate between the public and private sphere. Lund (2006, 2007) refers to this as 'twilight institutions' - where informal institutions adopt state-like conduct in order to regulate and control the behaviour of others. Although it is concerned with public authority and the blurry lines between public and private, 'twilight institutions' also tell a story of how institutions regulate various aspects of political life. Through its



focus on local political processes, informal institutions regulate informal political life in a highly ordered manner. For example, Pratton (2007), in his study on vigilante groups in South-eastern Nigeria, found that, through patrimonial forms of governance, youth groups employed various tactics and strategies, such as vigilantism, monitoring local government expenditure, screening local political actors and so forth, as a framework for regulation. Other examples of how informal actors embody state-like regulation include studies on vigilantism (Buur, 2005) and extra-legal networks (Raeymaekers, 2010). For example, Buur (2007), in his study of vigilantism in Port Elizabeth, South Africa, found that these groups mimic the state monopoly over violence.

In addition, institutions of identity play a key regulative role in structuring informal institutions. Institutions of identity include social institutions such as caste, gender, ethnicity, and religion. The role of caste in organising informal economic and political life has mainly been observed in studies in India and plays a critical role in determining access to particular types of informal work (Harris, 1978; Breman, 1996). Traditionally waste work or scavenging in India has been assigned to Scheduled Castes, also referred to as 'Untouchables'. Furedy (1984b), in a study of scavenging systems in Calcutta, found that scavenging was tolerated in Calcutta because scavenging by scheduled castes removed wastes from the streets before the city established its own cleansing staff. Furedy also observed the difference in scavenging activities across different castes. Beall (1997a) found that, in the context of residential solid waste management in Faisalabad, Pakistan caste identities were used as an entry into gaining access to waste management opportunities and a way to improve one's position. In another study, Beall (1997b) further discusses the role of caste through residence attitudes towards sorting waste and the power issues that are embedded in caste systems. In another study, Chikarmane et al. (2001) show how caste systems in scrap metal are hierarchical, with particular castes occupying particular positions in the scrap metal industry in Pune and how belonging to a particular caste determines the type of waste work one can do. Studies in other

Asian cities also refer to the role of certain outcast groups and the continued association of particular socio-ethnic groups with dirty work, which restricts their ability of improving their status, working conditions and livelihoods (Furedy, 1990). Similar findings are present in empirical studies on informal street trading (Bhowmik and Saha, 2012; Mahadevia et al., 2014). Another example of the role of caste in regulating economic activities illustrates that caste plays a role in how public spaces are accessed (Pratt, 2006).

Gender also plays a key role in organising informal economic activities. For instance, studies on waste picking found that gender shape power and bargaining relations (Adama, 2012). DiGregario (1994), in his work in Hanoi, Vietnam, found that there is a high degree of gender partitioning, where men would specialise in materials like scrap, while women engage in less specialised activities and collect miscellaneous materials. Chikarmane et al. (2001) found similar trends in the scrap metal economy in Pune, where the income of women were less than their male counterparts operating at the same level. Another key issue that studies show is that women operate at the lowest level of the waste hierarchy (Furedy, 1990; DiGregario, 1994). In another instance, Beall (1997c) observed that preference was given to male employees when municipal waste collection was sub-contracted to private operators in Bangalore. A similar trend was mentioned by Muller and Scheinberg (2003); that women have limited access to opportunities in comparison to men.

Finally, ethnicity and religion also play an important role in regulating urban economic activities. For example, Adetula (2005) in his work in Jos, Nigeria found that urban ethnic-based associations and organizations play a key role in providing critical information on opportunities and facilitate the consolidation of resources. Meagher (2010b) also notes the importance of ethnic networks in securing access to opportunities. Lourenco-Lindell (2002), in her study of informal food trading in Bissau, pointed out that ethnicity play a key role in structuring market relations. Samson (2012) made a similar observation regarding ethnicity in her study of waste pickers in Johannesburg.

Beyond the scope of the informal economy there is a growing body of literature on non-state institutions and how it regulates social interactions. Some examples of studies that highlight the regulatory role of norms include studies on non-state governance (Börzel and Risse, 2010) and legal studies (Ellickson, 1991; Lessig, 1998).

In summary, there are two main issues that emerge from the above discussion of how informal activities are regulated. The first draws attention to the informal rules and norms that regulate informal activities and how it structures and organises informal practices. The second draws attention to how power is shaped and re-casted through various institutions operating side-by-side. Although these two main issues shed light on the heterogeneous nature of regulation and the multiple social relations that regulate economic, political and social life, the focus is largely on humans and the non-human is left out of the analyses. The following section discusses social networks and how it regulates informal activities.

### **2.2.3 *Social Networks***

Although social capital and social networks are often used in a convergent manner, social networks are considered as one of the key non-state or ‘informal’ forms of governance that regulate informal activities (Meagher, 2009). Over the past years, social networks have increasingly been considered as an alternative form of regulation outside the framework of the state (Meagher, 2005). It has made a significant contribution to understanding what regulates or governs informal economic or political life, by drawing attention to the regulatory role of personal relations and how it enables or constrain those operating in the informal economy. Broadly speaking there are two views of social networks and how it regulates informal activities. The first view emerged from the social capital paradigm and highlights how norms of reciprocity and trust play a central role in social networks. The second view emerged as a critique to the social capital paradigm of social networks and considers it from an institutionalist perspective. These views of social

networks offer interesting insights for understanding human agency in the informal economy.

The social capital view of networks has informed numerous studies since the late 1970s, with the most extensive empirical research and theoretical advances emerging in the late 1980s and 1990s in the fields of 'new sociology of economic development' and 'ethnic entrepreneurship' (Woolcock, 1998; Meagher, 2009). Meagher (2005) has succinctly summarised the variants of social capital in the literature. She identified the following three variants of social capital approaches of social networks: embeddedness (Granovetter, 1985); bridging and bonding approach (Putnam, 2000); and governance approaches (Powell and Smith-Doer, 1994).

The first social capital approach to networks, embeddedness, emerged in the 1980s with the work of Granovetter (1985). Granovetter (1985) made a seminal contribution to understanding the nature of micro-social relations in social networks. This approach considered social networks to be a property of groups and communities rather than that of individuals (Woolcock, 1998; Meagher, 2005). Key to Granovetter's (1985) idea of embeddedness is how behaviour and institutions are affected by social relations. From this, it becomes apparent that social relations regulate the flow of events in social networks. Some proponents of the embeddedness approach in social networks suggest that social mechanisms, such as value injection, group affiliation and enforceable trust, facilitate access to resources (Portes and Sensenbrenner, 1993) and coupling and decoupling as strategies to leverage weak attachments to assemble resources (Granovetter, 2002). While these social mechanisms facilitate access to resources, scholars have also argued that it can also constrain actions or derail individuals from their original goals (Portes and Sensenbrenner, 1993) or hamper resource mobilization (Granovetter, 2002).

Although embeddedness as a key organising logic in the informal economy has shed light on the heterogeneous factors that regulate economic behaviour, it has been criticised. For instance, studies on immigrant entrepreneurship criticised the

approach in that it largely makes reference to the social and cultural characteristics that are conceived of as a priori and neglects the wider economic and institutional context in which immigrants are embedded (Kloosterman, van der Leun and Rath, 1999; Kloosterman and Rath, 2001). Other scholars have critiqued the embeddedness approach for the following reasons: the wide-spread adoption of embeddedness has led to neglecting the market (Krippner, 2001); and rational choice modelling (Meagher, 2005).

The second social capital approach to networks relates to the bridging and bonding approach. Bonding refers to dense networks and is measured as the strength of family ties and trusts in the family, while bridging refers to cross-cutting networks and is measured along inter-ethnic contacts and outward orientation (Lancee, 2010). It is strongly associated with new institutional economics and refers to social networks as an 'order without law' approach (Meagher, 2005). It can also be considered as somewhat different from the first view of social capital paradigm of social networks in that its emphasis is on the individual and how they use their social roles, rather than the role of the individuals in shaping the flow of events (Meagher, 2005). This approach is often pre-occupied with the importance of strong and weak ties. The notion of strong and weak ties emerged from the work of Granovetter (1973). There is vast amount of literature in the informal economy on the regulatory role of strong ties in the form of family and kinship networks. Family and kinship networks regulate informal activities in the following way: regulating informal work through the supervision of activities (Furedy, 1984b; DiGregario, 1994); facilitating access to resources (Bian, 1997; Silvey and Elmhirst, 2003); and as an important source of security (Beall, 1995, 2001; Rakodi, 1995). While family and kinship networks largely have positive effects on networks it also constrains individuals through forced solidarity and redistribution (Grimm, Gubert, Koriko, Lay and Nordman, 2013). It can also be a poverty trap by holding individuals back from achieving personal goals (Hoff and Sen, 2005). Although the strong and weak ties theory offer interesting insights to understanding the role of family and kinship

networks in economic development, it has been criticised for its focus on cultural essentialism (Meagher, 2007b).

The third social capital approach to social network relates to governance approaches. Unlike the previous two variants of the social capital paradigm of social networks, the governance approach considers social networks as an alternative to market-based economic organisation (Meagher, 2005). As mentioned above, the second view of social networks emerged as a critique of its predecessors and moves beyond the content of social relations in social networks. It criticises the social capital view on the following grounds: for its focus on reciprocal social relations rather than the forms of regulation that underlie these relations (Roberts, 1994); it neglects issues of exclusion, subordination and power struggles (Beall, 1997b; Lourenco-Lindell, 2002); and neglects the broader institutional processes and structures that shape networks (Meagher, 2005). Key to the institutionalist perspective is to reconnect the analysis of social networks with the role of the state and other institutions (Meagher, 2005).

In demonstrating the value of an institutionalist perspective for social networks, Meagher (2005, 2010b) employs Grabher and Stark's (1997) 'legacies, linkages, and localities' as a framework of analysis. In doing so, Meagher (2005, 2010b) offers interesting insights into institutional factors that regulate informal economies. Meagher (2005, 2010b) highlights the following key issues. First, institutional 'legacies' relate to the historical, environmental and cultural factors that shape social networks. In the study of informal shoe-and-garments clusters in Nigeria, Meagher (2010b) shows how social networks are organised by a combination of cultural and historical factors, which resulted in the emergence of new groups and new associations in order to gain access to opportunities. Lourenco-Lindell (2002), in a study of informal economic networks in Guinea Bissau, also shows how historical processes that include the pre-colonial period play an important role in shaping social networks. In another instance, Lourenco-Lindell (2004) uses longitudinal research of informal trade in Bissau to show that the

combination of processes - historical and structural adjustment-determined strategies of survival and accumulation - are at play in regulating informal networks.

Second, the notion of 'linkages' highlights the way in which social networks are affected by economic and political change (Meagher, 2005, 2010b). Meagher (2005) also pointed out that disembedding, diversification and globalization are amongst the key strategies that have restructured social networks.

Third, networks are shaped by the locality in which it operates - 'complex ecologies' of formal and informal institutions in which they are embedded (Meagher, 2005). Here the institutional environment or context in which networks operate becomes critical, because it shapes regulatory processes in social networks. Meagher (1995, 2005) has argued that the nature of these 'complex ecologies' differ. This is particularly relevant in terms of how structural adjustment programmes (SAPS) have affected the informal economy in Latin America, Asia and Africa. Some scholars argue that, in the context of Latin America, structural adjustment not only had an impact on the expansion of the informal economy, but also had an impact on social networks (Babb, 2005; Roberts and Portes, 2006). For instance Babb (2005) argues that with SAPS came the increasing informalisation of labour and this resulted in a rise of social networks spanning across national borders (Babb, 2005). Some examples of organising across national borders include studies on waste picking (Medina, 2000; Samson, 2009) and street trading (Agadjanian, 2002). Globalisation and economic restructuring has reconfigured collective forms of organisation in the informal economy. This shift has led to internationalising struggles and breaking away from being highly localised, isolated, or being circumscribed to particular economic livelihoods (Lindell, 2010a). In the context of Africa, Meagher (2005) argues that SAPS have organised social networks because structural adjustment policies triggered intense competition in informal networks, which has led to undermining relations of co-operation and trust (Meagher, 2006).

From the above discussion the following issues emerge as central to the discussion of social networks and how it regulates informal activities. First, social capital views of networks highlight the role of social relations in enabling and constraining informal activities. Second, the institutionalist perspective of social networks highlights the various micro and macro social relations that organise social networks. The following observations emerged from this discussion. First, although social networks are a key form of regulation the focus is largely on humans as network actors. Due to this focus, the non-human is left out of the analysis. Another key observation that emerges from the discussion is that, although social networks highlight the heterogeneous factors at play in networks, it does not take into account how actors, their practices and actions are transformed and translated due to their participation in networks. The next section looks at hybrid governance arrangements and how it regulates informal activities.

#### ***2.2.4 Hybrid Governance Arrangements***

The final category of literature that analyse how informal activities are regulated falls under the auspices of hybrid governance and emanates from political studies, urban geography and urban planning. Although the debate on hybridity has been around for a long time, it is only during the 1990s that it surfaced in the informal economy discourse. In a comparative study of Latin America and the Middle East, Alsayyad (1993a, b) pointed out that through a combination of cultural processes, national and global economic orders organise informal housing processes on a local level. Recent work by McFarlane (2012) also alludes to the hybrid nature of regimes that regulate informal activities. This category makes a key contribution to understanding how informal activities are regulated, because it highlights the complexity of social relations and how formal and informal institutions simultaneously regulate informal economic and political life. Within this category of literature there are three modes of how hybrid governance arrangements regulate informal activities. The first mode of hybrid governance in the informal economy governance relates to how multiple regulatory forces – local, national and



international - regulate informal activities. The second mode of hybrid governance is bricolage. It focuses on how people actively piece various types of institutions together in order to deal with challenges or secure opportunities. Finally, the third mode of hybrid governance is referred to as 'governing composites' and it relates to the everydayness of urban life and how people are assembling collectives. These modes of regulation speak to how people in the informal economy relate to various institutions and practices in the face of urban constraints or opportunities.

The first mode of hybrid governance focuses on the multiplicity of regulatory forces in the informal economy and draws attention to the role of macro structural forces in shaping hybrid governance arrangements. Some of the key structural elements that have shaped the informal economy are structural adjustment programmes and economic restructuring. These structural elements impact and shape the dynamics in the informal economy at a local level (Tokman, 1989; Rakowski, 1994; SAPRI, 2004). Recently, Meagher and Lindell (2013) argued that it is critical to pay attention to the processes of economic restructuring, and governance transformation to understand how informal activities are regulated at a local scale. For example, in a previous study of informal security arrangement in Nigeria, Meagher (2012) argues that, in order to understand the effectiveness of hybrid arrangements and the various regulatory forces involved, it is essential to take into account the context of local struggles, and national as well as international economic interests. While, Meagher and Lindell (2013) make an interesting point about the focus on hybridity and how it organises governance arrangements in the informal economy, their focus is largely on the macro-structural constraints and how that organises local struggles. The non-human does not feature as part of the analysis in the pluralisation of regulatory forces in the informal economy.

The second mode of hybrid governance arrangements is bricolage, also known as 'institutional crafting' or 'institutional do-it-yourself' (Cleaver, 2002; 2007). The notion of bricolage originally emerged in the work of Levi-Strauss and has been widely applied in the literature, including studies on entrepreneurship, water

governance, and international relations. Bricolage as a mode of hybrid governance in the informal economy differs from the previous mode in that it draws attention to the complex nature of social and livelihood identities and how governance arrangements are negotiated and structured (Cleaver, 2002, 2007, Cleaver, Franks, Maganga and Hall, 2013). There are three issues around bricolage as a mode of regulation and how it regulates informal activities. The first is around the formation of institutions and its role in dealing with challenges and opportunities. The process of forming institutions involves bringing together or patching formal and informal institutions in order to mobilise resources. For example empirical studies on informal street trading show how 'making do with what is at hand' regulate informal activities through acts of resistance (Nesvag, 2000); or finding ways to weave together livelihood activities in order to pursue coherent livelihoods (du Toit and Neves, 2009). Other studies on cross-border trading shows how the formation of norms is mediated through power in order to dictate to others (Titeca and de Herdt, 2010) or draw on existing social and cultural arrangements to adapt to new situations (Raeymaekers, 2009). Another example of how bricolage has organised informal governance processes is through the process of 'scalar bricolage'. Marston (2014) shows how water committees engage in a range of scalar strategies to transform their water system from informal to quasi-formal.

The second issue of bricolage as a mode of regulation relates to how formal and informal mechanisms of governance direct resources and allocate rewards. One of the ways in which informal actors direct resources and allocate rewards is through strategically patching together formal and informal institutions. For example, one study on informal entrepreneurship shows how entrepreneurs employed a variety of strategies to encourage collective action, such as framing, aggregating and bridging in order to garner resources, mobilise support and transition from informal to formal (Lee and Hung, 2014). Other examples include studies on informal housing, where hybrid forms of regulation organise informal lives (Altrock, 2012; Kreibich, 2012). Beyond the scope of the informal economy,

some studies on social entrepreneurship also highlight the various strategies actors employ in order to mobilise resources (Baker and Nelson, 2005; Desa, 2012).

Whilst bricolage brings an interesting perspective on hybrid governance arrangements in the informal economy and the role and intersections of formal and informal institutions, its focus is largely on human relationships. This is apparent from the way in which resources are treated in the literature on bricolage and the informal economy. Resources are largely overlooked, with the focus on the social relations that emerge around it becoming prevalent in discussions. In these instances, it is the agency of individuals or collectives that enjoy more attention instead of the nonhuman counterparts that also plays an active role the 'patchwork' of social relations.

Finally, the third mode of hybrid governance is referred to as the 'governing composites'. The notion of governing composites refers to how people connect and combine multiple social and material relations in order to achieve order (Simone, 2008). The notion of governing composites as a mode of governing informal life is similar to bricolage in that it draws attention to how people combine heterogeneous relations, but it differs in that it shifts the focus to the constitution of various things and people both temporarily and sometimes permanently in the everydayness of urban life (Simone, 2008).

There are two issues that relate to how governing composites regulate the everyday life of urban informal actors. First, Simone (2008) highlights that informal actors are involved in a constant process of bringing together people and things that otherwise would have been disconnected. This is also closely related to the later work of Simone (2010), where informal actors are involved in building 'collectives,' and it is these collectives that create a sense of order in the daily lives of people in the city.

The second issue that emerges from the notion of governing composites is how spaces are organised in the informal economy. The bringing together of heterogeneous elements, such as people, places and objects regulate informal activities in specific localities. In recent writing, Simone (2011) highlights how specific localities, such as the market place, have important insights for how urban scholars understand how people assemble people, places and objects and how that plays a role in dealing with uncertainty. In another instance, Madoeuf (2005), in a study of Cairo, makes a similar point of how public space is created through bringing together people, places and objects in various ways.

Another mode of hybrid governance that is closely related to the governing composite notion is the idea of assemblages. It is only recently that scholars began to recognise the value of assemblage thinking for understanding how informal activities are regulated. Dovey (2012) creatively combine theories of assemblages and complex adaptive systems to address the formal-informal divide. In doing so, Dovey (2012) also sheds light on the complex nature of synergies between formal and informal and how this regulates informal activities. Dovey (2012) argues that these synergies are complex and highly adaptable and this organises how informal actors engage with each other.

Unlike the previous mode of hybrid governance that largely overlooks the role of the non-human; governing composites bring the non-human into the analysis. The non-human or thing features as part of a composition that shapes the flow of events. However, the focus remains on the human and how its action in the composition organises informal activities.

Other informal economy studies that highlights the hybrid nature of social order in the informal economy include studies on informal work (Williams, 2009; Nadin and Williams, 2012); livelihoods (Owusu, 2007); and informal urbanization (Yiftachel and Yakobi, 2004; Soliman, 2004). Beyond the scope of the informal economy, there is growing body of literature on hybrid political order (Renders and

Terlinden, 2010; Boege, Brown and Clements, 2009). Some other examples on hybrid orders include studies on peace-keeping (Belloni, 2012; Albrecht, 2014) and hybrid regulation (Levi-Faur, 2011).

Hybrid governance arrangements highlight the complexity of governance arrangements and how it organises informal activities. From the above discussion three key issues emerge from how hybrid governance regulates informal activities. The first issue that emerges from this discussion is that the debate is largely concentrated on human actors, organisations, institutions and arrangements -all overlooking the role of non-humans in hybrid orders. Second, although governing composites has begun to recognise the role of non-humans, very little is known about its role and more empirical studies are necessary to understand its role in hybrid governance arrangements. Finally, hybrid governance arrangements also shed light on the heterogeneous elements - the local, national and international aspects - as well as the material that organise spaces in the informal economy. However, its focus remains largely with the agency of humans, overlooking the agency of non-humans in organising spaces.

### 2.2.5 *Summary*

The above discussion has focused on some of the informal regulatory mechanisms that regulate informal activities. It does not however, claim to provide a definitive picture of how informal activities are regulated, but rather provides a starting point for elaborating how social relations are regulated in the informal economy. From the perspective of this study, these four perspectives arguably offer a heterogeneous account of the various norms, rules, institutions and governance arrangements that regulate the informal economy.

As I have pointed out in the above discussion, the focus is largely on the human as the key agent of regulation in the informal economy. From the discussion, the following became apparent; the first observation relates to 'who' the agents in the

informal economy appear to be. As the above discussion shows it is largely the human actor that takes on an active role in shaping the flow of events in the network or organises space in the informal economy. The second observation that emerges from the above discussion relates to the notion of spaces and how it is produced through social relations. The discussion shows that spaces in the informal economy are produced through a combination of economic, political and social processes. These processes emerge largely from human exchanges. Finally, it also became apparent from the above discussion that, in the instances where the role of the non-human is recognised, the focus remains with the agency of the human in social relations. The following section elaborates further on these three points and its relevance for this study.

### **2.3 Regulating Informal Activities: Gaps and Challenges**

The previous section outlined much of what we know about how informal activities are regulated. From this we learned that there are multiple arrangements and actors that enable or constrain economic, political and social relations in the informal economy. A key criticism that emerged from the above discussion is that regulation in the urban informal economy focuses exclusively on humans neglecting the role that non-humans can play in enabling or constraining informal economic and political life. According to Latour, non-humans play an important role in co-constituting and configuring the social world. In this social world non-humans are actants – something that acts or to which activity is granted by others (Latour, 1996). Following Latour's notion of non-humans as actors, this thesis proposes a relational approach that takes into account both humans and non-humans in shaping economic, social and political life in the urban informal economy. Inspired by the work of urban geographers like Amin and Thrift (2002), Amin (2007) and Actor Network theorist, Latour (2005) this section identifies three areas in which the non-human is largely ignored in the urban informal economy discourse.

### 2.3.1 *Non-humans as regulatory agents*

The role of non-humans and how they enable or constrain informal economic activities has largely been neglected in the informal waste literature. 'Things', such as donkey or horse carts, pick-up trucks, trolleys, storage space, containers and so forth are largely referred to as resources or objects that are important for the effectiveness and efficiency of informal waste collection. In the instances where they have been referred to as resources scholars discuss how the lack of resources impact informal waste collection (Gutberlet, 2009; Bruce and Storey, 2010; Nzeadibe and Anyadike, 2012; Adama, 2012; Rocksen et al., 2012). Others mention the contestation around the different forms of transport, such as donkey carts, because municipalities prefer mechanised forms of transport (Fahmi and Sutton, 2006, 2010; Medina, 2007). Although looking at the types of resources have merit for understanding the challenges of informal waste collection, most scholars have largely neglected the active role that non-humans or 'things' play in enabling or constraining informal activities.

Recognising the active role of non-humans or 'things' is not new and is well explored in Actor Network Theory (ANT). The agency of 'things' or non-humans as it is referred to by ANT scholars has been well explored by scholars interested in the sociology of science and technology (Callon, 1990; Latour 1996, 2000, 2005). ANT views agency in terms of networks or associations and shows how agents, both human and non-human, emerge from these interactions or associations (Callon 1990, Latour 2000, 2005). 'Things' have agency, influence and shape power relations, and plays an important role in social order (Latour 2000). Informed by ANT thinking, urban planning and geography scholars also recognise the role of non-humans in social order (Massey, 1991; Thrift, 1996; Murdoch 1997 a, b; Graham 2010; Amin 2011, 2007). Scholars in criminology, such as Shearing and Stenning (1987), have also illustrated in their work on Disney world and private policing that architecture plays an important role in regulating behaviour. Though not directly related to ANT, anthropological works such as *The Social Life of Things* edited by Appadurai (1986)

has also explored the role of 'things'. The latter draws on a Marxist understanding to show how commodities and gifts influence exchanges.

Another area of study that recognises the role of 'things' and its impact on the political economy is that of political ecology. Inspired by ANT thinking, political ecology also draws on Marxist thinking and perceives the city as a relational space, made up out of complex relations between social, economic, political and material processes (Castree, 2002; Swyngendouw and Heynen, 2003). Mostly concerned with the urban context, political ecology contends that the city metabolism and transformation is made up out of both physical and social processes (Swyngendouw, 1999, 2006; Swyngendouw and Heynen, 2003). Studies in political ecology have focused on issues of water, alcohol, food, and waste to illustrate the complex interactions around non-humans and how this shapes power relations in the city (Gandy, 2004; Bennet, 2007; Yates and Gutberlet 2011; Lawhon, 2013).

Closely related to the previous area, another area of study that recognises the agency of non-humans is urban geography. For example, there is a large body of literature that looks at the role of non-humans, such as animals, as political agents (Hinchcliffe and Whatmore, 2006; Hobson, 2007). Another body of literature typified as 'hybrid geography' also explores the role of non-humans as agents (Whatmore and Thorne, 2000).

Informal economies literature that employs the sustainable livelihoods framework in analysing threats and opportunities of livelihoods also comes close to recognising the agency of 'things'. This is mainly due to the fact that the sustainable livelihoods framework perceives livelihoods to comprise of capabilities or assets that include both material and social resources (Chambers and Conway, 1991; Scoones, 1998). Studies that employ the Sustainable Livelihoods Framework or Sustainable Livelihoods Approach as a framework of analysis cut across different informal economies, such as street trading, informal waste collection, agriculture etc. (see for



example Rouse, 2006; Lyons and Snoxwell, 2005 a, b). In these studies all the assets or capabilities are listed in order to understand the threats and opportunities of urban livelihoods. However, there is a tendency to focus on social capital as a key asset to understand the threats and opportunities of livelihoods in informal economies (see for example Rouse, 2006; Lyons and Snoxwell, 2005a, b). In the instances where there is reference to 'things', it is considered as physical capital or assets and is considered as resources that people draw on as a coping strategy.

To date, non-humans as agents are well explored in other fields of study too. As the previous section pointed out, non-humans, 'things' or materiality are an integral part of the urban informal economic and political life. Yet, they are cast as the 'infrastructure', 'resources', 'capital', or 'assets' around which social relationships emerge. In doing so, scholars do not consider the following aspects: a) that non-humans are active participants in informal economic and political life; and b) that non-humans are agents that create and contest practices of informality in the city.

Keeping this in mind, Chapter five provides some insights into the role of non-humans as regulators in the informal economy. It will do so by examining the role of non-humans in informal waste work. This chapter consider trolleys, carts, horses, small pick-up trucks, locally known as '*bakkies*' and storage facilities as agents in the regulation of informal waste work in the city. These non-humans do not merely serve the purpose of transporting or storing recycling materials, but are key actors that actively shape the flow of events in the daily lives of informal waste collectors. By looking at these non-humans as regulators we can learn that it is not only the humans that regulate the work of waste collectors. By looking at non-humans such as trolleys, carthorses, and storage facilities as regulators, Chapter five sets the foundation for the rest of the chapters, which looks at the role of these non-humans in organising the workspaces of informal collectors and its role in support networks in terms of how informal actors mobilise resources. Through a focus on

these non-humans as regulators one can learn that spaces and networks are organised by assemblages of humans and non-humans.

### 2.3.2 *Organising workspaces*

The next area that needs elaboration is how workspaces are organised for informal waste collectors. The notion of how spaces are organised for informal waste collectors has not received considerable attention in the literature, with the exception of Whitson (2011), Yates and Gutberlet (2011) and Samson (2012). Looking at how the workspaces of informal collectors are organised opens up the possibility for understanding how spaces are organised in the informal economy.

The notion of how spaces are produced is well documented in the informal economy literature. There are two main contributions that shed lights on this issue. The first contribution relates to how ‘informals’ through forms of mobilisation, agency and resistance produce spaces. For example, Bayat (2000) working in the context of the Middle East, shows how ‘informals’ appropriate and claim space. He refers to this the as ‘quiet encroachment of the ordinary’, where ordinary citizens perform individual and direct action for the redistribution of social goods, public space, and other life chances that is essential for surviving and for minimal standards (Bayat, 2000: 548). These ‘quiet forms of resistance’<sup>4</sup> shape spaces for the urban informals in a very particular way. Another example of this type of agency is present in the work of Simone (2004), where people and resources are assembled in various ways to deal with the uncertainty of urban living. In addition to the various individual forms of producing spaces there is also a discussion about the various collective forms ‘informals’ employ in the informal economy. This relates to the various associations through which informal workers develop collective visions in order to challenge state discourses and become political actors (Lindell, 2010c). Examples of empirical studies include street traders (Brown and Lyons, 2010).

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<sup>4</sup> This has been discussed elsewhere by James Scott (1985)

The second contribution of how spaces are produced in the informal economy relates to informality as a mode of production. This body of literature is largely informed by Roy and Alsayyad (2004) and argues that informality as 'organising logic' results in a specific mode of production of space. In a study on informal traders in Dhaka, Hackenbroch (2011) develops the idea that public spaces where livelihoods are carried out are constantly negotiated and renegotiated through the entanglement of actors and institutions. In this article Hackenbroch also argues that there is a difference in how spaces are organised for elite informal actors and ordinary informal actors. Elite informal actors are able to draw on power resources, power relations and legitimations. In another instance this is referred to as the 'organised encroachment of the powerful' (Hackenbroch and Hossain, 2012; Hackenbroch, 2014). In relation to this, Dovey (2012) argues that spaces in informal economies should be considered as complex adaptive assemblage that change and shift all the time.

Another field of study that also address the question of how spaces are produced is political ecology. For example, Swyngendouw (2006) shows how spaces are produced through socio-material processes. Other studies on political ecology that offer further examples of how spaces are produced through socio-material processes focus on water (Gandy, 2004; Swyngendouw, 2005). Other fields that address how spaces are organised through assemblages of humans and non-humans include security governance (Stenning and Shearing, 1987; Hentschel, 2010) and urban spaces (Amin, 2008, 2013).

To date, a considerable amount of literature has been published on how spaces are produced in the informal economy. These studies discuss how spaces in the informal economy are produced through various individual and collective initiatives, assemblages, and arrangements. Although, the role of nonhumans have been recognised in the production of spaces is well explored elsewhere very little is known about the role of nonhumans in organising spaces with the exception of Simone (2008a) notion of governing composites.

Chapter six will return to examine how workspaces are organised for informal collectors. It employs the 'regulatory space' metaphor from regulation studies to establish workspaces as a space of regulation that is organised by humans and non-humans. Adopting the 'regulatory space' metaphor offers an opportunity to include humans and non-humans in order to understand how order is created or contested in regulatory spheres. The chapter provides insights for informal economy literature, and contributes to developing a better understanding of how spaces are organised in the informal economy.

### ***2.3.3 Mobilising resources through enrolment***

The third area that needs more elaboration is how informal collectors mobilise resources. There are two key issues that stand out in how people mobilise resources in the informal waste economy. The first relates to who informal collectors rely on. When looking at who people rely on as a resource in informal waste economies one sees a combination of both social and economic ties. For mere income purposes, people rely on family ties. Several studies have observed how informal waste collectors rely on family ties to assist in their activities. For example, empirical studies observed that family ties at dump sites are an important source of economic and social support (Furedy, 1984a, b; Wilson et al., 2006). In other instances to gain access to working premises, informal collectors rely on economic ties with middlemen (Adama, 2012).

The second issue relates to how resources are mobilised. How people draw on resources in informal waste economies is well documented in the literature. One of the prominent ways of drawing on resources in informal waste economies is through collective initiatives. The most common explored collective initiatives in informal recycling literature are: cooperatives, waste picker associations and networks. Waste cooperatives have a long history and are more prevalent in Latin American countries than elsewhere. Collective initiatives offer opportunity as well as challenges. Collective forms of organising are beneficial for reasons such as providing

employment, increasing the income of members, improving working and living conditions, social inclusion, collective and solidarity experience, promoting grassroots development and so forth (Medina, 2000, 2007; Gutberlet, 2008, 2010, 2012; Samson, 2009; Fergutz et al., 2011; Dias, 2011a). Collective forms of organising is challenging because it is often a site of contestation, mistrust develops among members, and the difficulty of managing cooperatives (Gutberlet, 2009; Samson, 2010; Do Carmo and de Oliveira, 2010).

How people mobilise resources is well explored in the informal economies literature. It looks at both individual and collective forms of agency. Individual forms of agency are well documented in the literature on social capital and social networks (Lourenco-Lindell, 2002; Meagher, 2005; Lyons and Snoxell, 2005a, b). So too is collective agency in the form of organized responses to economic and political challenges (Lourenco-Lindell 2001; Lindell, 2010, a, b, c).

Social networks are considered important institutions for building collective capacity in informal economies (Lourenco-Lindell 2002; Meagher 2005, 2010). For example, Lourenco-Lindell (2002), in her study on social networks in Bissau, draws attention to the complex relationships people draw on and refers to this as 'politics of support mobilisation'. However, this study also shows that these relationships can create opportunities for participation, while at the same time creating constraints. Similar trends were observed in other studies of informal economic organisation (Beall, 1997a, 2001; Meagher 2010a, b).

To date, a considerable amount of literature has been published on how resources are mobilized in the informal economy. These studies discuss how individuals, families and collectives mobilize resources in response to economic and political challenges. Studies on waste picking show that collective organizing is a major avenue through which informal actors are able to confront challenges and improve their livelihoods (Medina, 2000, 2007; Samson, 2009; Gutberlet, 2009). Although, these studies are a valuable resource for understanding how informal

actors mobilize resources, debates have been preoccupied with the social, which mainly focus on relationships between humans, and have neglected the role of non-humans in the process of mobilising resources.

Chapter seven will examine how informal collectors mobilise resources and how they organise their daily activities. It employs an enrolment analysis to evaluate the strategies that informal collectors use to achieve various goals related to their work. It focuses on three questions: who do informal collectors enrol, what do they enrol and how do they enrol in order to access and accumulate waste. An enrolment analysis offers the scope to include non-humans as network actors. Expanding the support network of informal collectors to include non-humans will improve our understanding of how informal activities are regulated, by looking at the role of the non-human in building alliances in the informal economy.

## **2.4 Concluding Comments**

The focus of this chapter was to examine key debates on how informal activities are regulated. It focused on the following four perspectives to examine this key question: first it looked at social capital and its role in creating, contesting and maintaining social order. This category of literature makes an important contribution to understanding the micro and macro relations that regulate the informal economy. The second perspective focuses on the institutions, such as rules and norms that regulate informal activities. The discussion shows that informal activities, although not directly regulated by the state, are regulated by various rules and norms that structure economic, social and political life. The third looks at social networks as a regulatory framework for informal activities. It highlights the following two key aspects that regulate informal activities; the content of social relations and the broader institutional frameworks in which networks operate. Finally, the chapter takes a look at hybrid governance arrangements and how it regulates informal activities. From this discussion it became apparent that a combination of local, national, international and material forces regulates informal activities. Although all four of these perspectives provide an interesting account of the heterogeneous

factors that organise the informal economy, the key area that is largely overlooked in the analysis of regulation in the informal economy is the role of the non-human. With this in mind, the remainder of this study will focus on the role of non-humans, guided by the following key question: how are informal activities regulated in the city? In order to answer this, three sub-questions are examined. These are:

- What is the role of non-humans in informal waste activities?
- How do non-humans organise the workspaces of informal collectors?
- How do non-humans enable or constrain support networks of the informal collectors?

Before turning to investigate these questions, it is useful to outline the methodology of this study and provide some background to the context in which the research took place. These are the subjects of the next two chapters.

## Chapter Three: Researching Informal Waste Collection in Cape Town

### 3.1 Introduction

As discussed in the previous chapter it is apparent that there are various modes of regulation in the informal economy. There are a vast amount of studies that have documented how these modes of regulation organise informal economic and political life. However, the focus is largely on human exchanges constituting the main component of social relations, with the exception of Simone (2008, 2011); McFarlane (2008, 2011a) and Dovey (2012). These scholars have begun to draw attention to the role of assemblages in the informal economy, specifically how bodies, things, materials and spaces are entangled and disentangled through various socio-material practices. Although these studies began to unpack some interesting facets of how humans and non-humans intersect and regulate the urban informal economy and more broadly urban processes, their empirical foci are mainly on urban infrastructure, informal housing and informal markets. As a result, very little is known about the role of human and non-human assemblages of other types of urban informal activities.

With this in mind, the aim of this study was to uncover how these assemblages of humans and non-humans regulate the urban informal economy in order to understand how informal activities are regulated in the city. Informal waste activities were identified as a site to explore the regulatory role of assemblages of humans and non-humans. In line with the main aim of this study, I employed primarily a qualitative approach, focusing on informal waste collectors in Cape Town. Informal waste collectors in their daily work with waste in the city is involved in assembling people, things, materials and places in various ways. In this chapter I explain and outline the methods I employed to arrive at an understanding of how these informal activities are regulated in the city.

This chapter is divided into five sections. Following this introduction, the next section outlines the research paradigm and situates this research project within the



broader literature, especially with regard to its knowledge and theoretical claims. The following section explains the research design and discusses issues of validity and reliability. The fourth section explains the methods used and the data analysis techniques employed in this study. Finally, and in concluding the chapter, the last section reflects on the role of researcher's experience of researching informal waste collection in Cape Town.

### 3.2 Social Constructivism

Paradigms, the structurally embedded set of beliefs that often (implicitly) inform research (Lincoln and Guba, 2011; Creswell, 2013) are important for positioning the researcher. They may play a role in determining the worldview of the researcher and their *a priori* set of assumptions/beliefs, and encompass terms such as ethics (being moral in the world), ontology (the nature of reality), epistemology (how is reality known), and methodology (means to acquire knowledge) (Lincoln and Guba, 2011).

From both a historical and theoretical perspective, there are a number of paradigms or worldviews with respect to research, such as positivism/post-positivism, constructivism/interpretivism, critical approaches, transformative/ post-modern, pragmatism (Feilzer, 2010; Hesse-Biber and Leavy, 2011, Lincoln and Guba, 2011; Creswell 2013). Moreover, even though these paradigms may seem to be analytically congruent with a relative set of ethics, ontological assumptions, epistemological viewpoints, and methodological frameworks, their boundaries or border lines have been shown to be thoroughly enmeshed (Lincoln and Guba, 2011). Of these, the domains of and relationships between positivist and post-positivism, not to mention constructivism and interpretivism, have dominated scholarly discussions in both the humanities and social sciences, and are often positioned in opposition to one another. The positivist and post-positivist paradigms are often associated with quantitative research and are often described as reductionist, cause-and-effect oriented, and deterministic (Lincoln and Guba, 2011; Creswell, 2013). On the other hand, the social constructivist paradigm is associated with qualitative

research, focusing on the subjective experience, understanding how individuals make sense of the world they live in, and generating theories or patterns from experiential data (Lincoln and Guba, 2011; Creswell, 2013).

In light of this, the theoretical focus of this study is more closely aligned with a social constructivist worldview rather than a positivist worldview. Social constructivism is most often considered as an interpretative framework, and is analytically defined by questions that engage with how individuals seek to understand the world in which they live and work and how subjective meaning is constructed (Hesse-Biber and Leavy, 2011; Creswell, 2013). There are two broad strands of constructivism: the one strand focuses more on the individual knower and acts of cognition and is known as radical constructivism or psychological constructivism. The central idea of radical constructivism is that knowledge is an unending series of processes of inner construction (Schwandt, 2007). The other strand, social constructionism focuses more on the social process and interaction and has some affinity to theories of symbolic interactionism and ethnomethodology. Its emphasis is mainly on the actor's definition of a situation; understanding how social actors recognise, produce and reproduce social relations; and how actors come to share an inter-subjective understanding of specific life circumstance (Schwandt, 2007). Underpinning these strands of social constructivism is a relativist ontology, which highlights that multiple realities are constructed through lived experiences and interactions with others (Johnson and Onwuegbuzie, 2004; Denzin and Lincoln, 2008; Creswell, 2013). In terms of its epistemological beliefs, the social constructivist paradigm believe that reality is not naturally given but rather co-constructed or socially constructed between the researcher and the researched and shaped by individual experiences (Alvesson, 2009; Denzin and Lincoln, 2008; Creswell, 2013).

In consideration of its ontology and epistemology the social constructivist paradigm translates into research practice in the following way; social constructivists make use of inductive (subjective) reasoning (Creswell, 2013). This is evident in its approach to generate or inductively develop theory rather than start with a theory

(Creswell, 2013). In this process, social constructivists generate theory from the subjective meanings and experiences that emerge during the research process. This paradigm usually informs research approaches that describe the experience, views and perspectives of individuals, including phenomenological and grounded theory studies (Creswell, 2013).

Finally, why was constructivism the worldview of this research? A social constructivist paradigm allowed for a relativist ontology that recognised the subjective meanings of experiences – meanings directed towards certain objects and things (Creswell, 2013). In consideration of this, it was important to understand the meanings waste collectors ascribed to their daily activities and how these meanings were formed through their interactions with people and things. Therefore to understand the phenomenon of informal waste collectors it was necessary to uncover all the subjective layers of meaning and experiences.

The social constructivist paradigm also allowed for research questions that are broad and open-ended so that individuals might construct meaning of a situation (Creswell, 2013). In lights of this, the open-ended research questions were critical to understand what enabled or constrained the work of informal collectors at the various spaces in the city. In addition, with these open-ended questions one was able to uncover the various meanings informal collectors ascribed to their daily activities, as well as the meanings that were embedded in the objects with which they work.

Furthermore, a constructivist worldview allowed for deploying a qualitative approach. A mix of qualitative methods was employed, which will be explored later in the chapter. The following section will discuss what a qualitative approach entails and explain why it was chosen for this research.

### ***3.2.1 Qualitative Research Approach***

Qualitative research is often analytically separated and positioned at odds with the quantitative approach, with qualitative approaches characterised as being concerned with words and quantitative approaches characterised as being concerned

with numbers (Neumann, 2000; Silverman, 2011). However, these distinctions have been called into question, as they assume differences that are problematic and frequently invalid (Silverman, 2011). Some of the key characteristics of qualitative research that had consequences for this study includes: it is usually conducted in a natural setting i.e. the field site, where participants experience the issue or problem under study (Creswell, 2013). It is largely concerned with the meaning people ascribe to their experiences, circumstances, situations as well as the meanings people embed into texts and other objects (Hesse-Biber and Leavy, 2011; Creswell, 2013). Qualitative approaches allow the researcher to gather information employing multiple methods (Creswell, 2013). It also allows for complex reasoning through inductive and deductive logic, allowing researchers to build patterns, categories and themes from the 'bottom up' (Creswell, 2013).

Before embarking on a discussion of the consequences of adopting a qualitative approach for this study, it is useful to briefly outline the types of research that have been previously conducted on informal waste collection in developing countries. Traditionally, most of the empirical studies on informal waste activities have been carried out by anthropologists employing qualitative methods (Medina, 2007). For example, some of the earlier work that made a significant contribution to understanding informal waste activities, such as Birbeck (1978) and Sicular (1992), employed qualitative methods. Both these studies draw on small sample sizes and provided in-depth knowledge of informal waste activities at particular sites. However, these studies, and others that primarily employ qualitative approaches, have been criticised as limiting and not generalizable (Medina, 2007).

Samson (2010) provides an extensive review of the research that has been done on informal waste collection in various African countries, including Cairo, Kenya, Zimbabwe, Nigeria and South Africa. The majority of the studies done in these countries relied on quantitative methods, using the survey method with sample sizes of up to 250 participants. There are also a large amount of studies that used qualitative research methods, such as interviews, participant observation, and

action research. As such, they aimed to understand the role of informal waste collection in the livelihoods of poor people, and its contribution to the environment, recycling industry and waste management industry. Although these studies are a valuable resource for understanding informal waste collection in Africa, Samson (2010) has duly criticised this resource for its narrow focus, its lack of theorisation, and its tendency to treat informal collectors as passive agents.

While Medina (2007) and Samson (2010) highlight important gaps in this body of literature internationally, and in Africa specifically, it still does not adequately address the question of how informal waste activities are regulated. In light of this, the central research question that guides this study, short of any complexity, is *'how are informal activities regulated?'* This central question is broken down into three sub-questions. Each addresses a specific element that sheds light on the conditions that enable or constrain informal waste collection on the streets:

- What is the role of non-humans in informal waste activities?
- How do non-humans organise the workspaces of informal collectors?
- How do non-humans enable or constrain support networks of the informal collectors?

At a broader level, these questions are all focused on developing an understanding of the modes of regulation in the informal economy. Specifically the study aims to further develop an understanding of how informal waste activities are regulated in the context of Cape Town, South Africa. While one may conduct a structural analysis, the perspectives of the workers themselves are invariably understudied and misunderstood. As such, an in-depth analysis requires one to explore the viewpoints of waste collectors themselves, particularly with regards to how they understand the benefits and challenges of their work, the daily routines of waste collection in its specific context, how these practice are disrupted or sustained, and lastly, who and what shapes the flow of events that impact on their lives. In

light of this, a primarily qualitative approach will be more adept at answering these research questions.

A primarily qualitative approach also allows one to conduct research in natural settings, i.e. field site where participants experience the problem or issue under study (Johnson and Onwuegbuzie, 2004; Creswell, 2013). This was important in this study, because, in order to understand the various actors (both human and non-human) that regulated informal activities, it was critical to study informal collectors in context. The context in which their work took place was various areas across Cape Town and looking at these various areas was critical for seeing the variation in challenges.

In addition to studying the phenomenon in its natural setting, a qualitative approach also allowed for understanding the meaning people ascribe to their experiences, circumstances, situations as well as the meanings people embed into text and other objects (Hesse-Biber and Leavy, 2011; Creswell, 2013). This allowed one to treat informal collectors as active agents that ascribe meaning to their activities. Furthermore, a primarily qualitative approach allows for the use of a variety of methods – participant observation, interviews, personal experience, life stories etc. to describe the meanings that individuals or groups ascribe to their lives (Denzin and Lincoln, 2008; Hesse-Biber and Leavy, 2011). The use of multiple methods was particularly useful to seek convergence and corroboration of the results from different methods, studying the same phenomenon (Johnson and Onwuegbuzie, 2004). Although a qualitative approach is appropriate for this study, it also comes with a set of weaknesses. One of the main weaknesses of qualitative research is the issue of generalisation – knowledge produced may not be generalized to other people or other settings (Johnson and Onwuegbuzie, 2004). This is particularly relevant when using a case study approach (see section 3.3.2 for a detailed discussion). Some suggestions have been made on how to mitigate the issue of generalisation in qualitative case study research elsewhere in this chapter. However, since the aim of the study was to explore the phenomenon of informal

waste collectors in order to improve the current understanding of how informal activities are regulated the issue of generalisation was not a concern. As explained elsewhere, the aim was not to generate an understanding of the larger population of informal collectors, but rather to gain an in-depth understanding of informal collectors in Cape Town and how their work is regulated.

Another weakness associated with qualitative research is the issue of interpretation, which relates to how one knows whether the interpretation is valid and not informed by one's own bias. One of the ways of mitigating this is through the process of reflexivity, where the researcher conveys their background and how it informs their interpretation of the information in the study (Creswell, 2013). This is discussed in detail in section 3.7 of this chapter. Another way of mitigating this issue was through going back to participants and reflecting on the answers provided during data collection, which was done in seminars, workshops and meetings.

### **3.3 Research Design**

This section details the design of the study, reflecting on the relevance of grounded theory and a case-study approach, and their utility in studying informal waste collection. Congruent to this is a discussion of reliability and validity.

#### **3.3.1 *Grounded Theory (GT)***

A grounded theory (GT) approach was used because it fits well with a constructivist approach and the aim of this approach is to develop theory from data in an iterative process. GT refers to a set of systematic inductive methods for conducting qualitative research, aimed at theory development (Charmaz, 2004, 2011). The term GT refers to two aspects: a) a method consisting of flexible methodological strategies, and b) the products of this type of inquiry (Charmaz, 2004). It has a long history and was developed in the 1960s by Glaser and Strauss (1967) with the express purpose of developing substantive theoretical insights from empirical data. Since then it has been used extensively and different variants of grounded theory have emerged (Bryan and Charmaz, 2007); examples include the

systematic approach of Strauss and Corbin (1998); constructivist grounded theory of Charmaz (2006) and the postmodern grounded theory of Clarke (2005).

The approach that was employed in this study can be considered to be in line with constructivist forms of grounded theory. This approach fits well with a broader social constructivist worldview (Creswell, 2013). This variant of grounded theory differs from the other two variants of GT, because it places priority on the studied phenomenon and sees both data and analysis as created from shared experiences and relationships with participants (Bryant and Charmaz, 2007) and integrates relativity and reflexivity throughout the research process (Charmaz, 2011).

In practice, constructivist grounded theory approach provides flexible guidelines for generating theory, placing more emphasises on the views, beliefs, values, feelings, assumptions, and ideologies of individuals rather than on the methods of research (Creswell, 2013).

In light of this, the main reasons why a constructivist grounded theory were selected for this study is as follows: Although GT starts with an inductive approach, it is considered as an iterative, interactive, and abductive method that links inductive and deductive analysis (Bryant and Charmaz, 2007; Charmaz, 2011). The iterative nature of GT allowed a more dynamic theory generation to occur, one that allows the researcher to move back and forth between analysis and data collection, because each informs and advances the other (Charmaz, 2011). This meant that new theoretical ideas could emerge in the study of informal collectors while remaining close to the data while constantly testing out ideas as data is being collected (Hesse-Biber and Leavy, 2011). The section on data analysis will delve more into the implications of using a grounded theory approach.

Although, constructivist GT offered many key features for this study, it also comes with its weaknesses. One of the main weaknesses of grounded theory is the issue of saturation – the difficulty of determining when categories are saturated (Creswell, 2013). Suggestions have been made in terms of how one can mitigate



against this, such as gathering additional information from individuals different from those who were initially interviewed to make sure that the theory holds true for these additional participants (Creswell, 2013). The section on sampling delves further into the implications of using grounded theory approach.

### 3.3.2 *Multiple Case Studies*

Case study research is one among several other ways of 'doing' social science research (Yin, 2009; Hesse-Biber and Leavy, 2011; Creswell, 2013). A case study is both a process of inquiry and a product of that inquiry (Stake, 2005). It involves the study of an example in a real-life setting or context (Yin, 2009). It has several defining features, such as the identification of a specific case that allows for an in-depth understanding of a particular phenomenon (Creswell, 2013). There are different types of case studies. Stake (1995, 2005) distinguishes between three different forms: a) intrinsic case study; b) instrumental case study; and c) multiple or collective case study.

As mentioned above, this study poses a 'how' question, which makes the case study an appropriate fit for this thesis. According to Yin (2009) 'how' and 'why' questions are exploratory and well suited to case studies. In addition to this, the case study method is appropriate to this study for two primary reasons. Firstly, it allows for an in-depth exploration of informal waste activities in the context of a specific site, Cape Town. Secondly, it allows one to draw on multiple methods of data collection, such as observation, interviews, documents, and audio visual materials. These can be used to explore how informal waste activities are enabled or constrain on a daily basis.

This study employs a multiple case study method. It is appropriate for the following reasons: firstly it provides one with the scope to explore individual cases, to understand common characteristics, or draw a single set of 'cross-case' conclusions (Stake, 2005; Yin, 2009). Secondly, it provides a better understanding of

how informal waste activities are regulated and subsequently contributes to improving a broader understanding of informal economies.

For the purposes of this study, I chose three cases employing purposeful sampling. Purposeful sampling involves the purposeful selection of participants that will best help to understand the research question (Creswell, 2009). Each of the three cases represents a type of collector (see Chapter 4 for detailed explanation). Cases were selected on the basis of the following characteristics that emerged during the early stages of data collection. The characteristics are as follow: type of material, type of transport, places where they carry out their work. Table 1 is an illustration of the cases and the features that informed my decision.

**Table 1: Illustration of cases**

<b>Cases</b>	<b>Type of Material</b>	<b>Type of Transport</b>	<b>Collection Space</b>
<i>Skarelaars</i>	Various types of material	Trolley	Streets
<b>Carties</b>	Scrap metal	Carthorse	Streets
<b>Bakkie Brigade Operator</b>	Specialised collection of – glass, paper, plastic	<i>Bakkie</i>	Commercial premises

As much as the case study method comes with significant benefits it also presents challenges. One of the common challenges of case study research is identifying individual cases (Creswell, 2013). In terms of identifying each case, I chose to investigate three categories of informal waste collection highlighted above. The cases were not chosen in order to generalise broader populations, but rather to gain an in-depth understanding of how informal waste activities are regulated across the three categories. Furthermore, cases were also chosen to generate theory

(via theoretical sampling). This resonates with the constructivist grounded theory approach that asks questions such as ‘what is happening’ and ‘what are people doing’ (Charmaz, 2005).

In addition, issues of validity and reliability are relevant for case study research. The concepts of validity and reliability are important for assessing the quality of empirical social research (Yin, 2009). It is quite a daunting task to choose adequate definitions for these concepts. As Hammersley (1987) has pointed out, there is a large body of literature dealing with the concepts of validity and reliability with substantial divergences in definitions and some overlaps between the two concepts. Procedures for validation and quality of qualitative research differ across the different approaches (Creswell, 2013).

The use of multiple methods, or triangulation, is important for validity in a case study. In order to establish validity in this case study two forms of triangulation was used: data triangulation and method triangulation. The first refers to employing different data sources to establish categories in the study, while the latter employs different methods to establish validity (Hesse-Biber and Leavy, 2011). In terms of data triangulation I drew on studies, annual reports, workshop reports, letters, and newspaper articles to establish validity. This was particularly useful in the instances of understanding the contested nature of trolleys and carthorses on the streets of Cape Town (discussed in Chapter five). In order to establish and corroborate information, I employed different methods, including questionnaires, participant observation, and semi-structured interviews. The survey was done to gain an understanding of the types of materials, level of income, and types of transport informal collectors rely on to do their work. Triangulation of methods and data was particularly useful as it provided me with the space to explore multiple perspectives of how informal waste activities are regulated on the streets of Cape Town (Hesse-Biber and Leavy, 2011).

Studying informal waste collection in a particular context allows for a better understanding of the Cape Town case, rather than to attempt to generalize beyond this specific context (Stake, 2005). Though Medina (2007) and Samson (2010) suggest that larger populations of waste collectors should be studied, I chose to proceed with a case study to get an in-depth understanding of the nature of informal waste collection in Cape Town, and how it is regulated. The following section provides a discussion of the various methods by which data was collected in this study.

### **3.4 Methods of Data Collection**

#### **3.4.1 *Participant Observation***

Participant observation is an essential source of data collection in case studies (Yin, 2009). The term 'participant observation' is often used interchangeably with ethnographic and/or fieldwork-based research (Delamont, 2004). For the purposes of this study, I will use participant observation as an inclusive term, referring to the prolonged participation of the researcher in the daily life of an individual or a group (Becker, 1970). Participant observation is useful as a method of data collection for two primary reasons: first, it allows the researcher to get a holistic understanding of how people make sense of their lived reality and second, it usually takes place in the natural settings of where people go about their daily lives (see Delamont 2004; Hesse-Biber and Leavy, 2011). There are four different types of observation. The first type is referred to as complete participation, where a researcher is fully engaged with the people they are observing; the second type is referred to as participant observer, where the researcher is participating in the activity at the site; the third type is referred to as non-participant/observer as participant, where the researcher is an outsider to the group under study, watching and taking notes from a distance; and finally the fourth type is referred to as the complete observer, where the researcher is neither seen nor noticed by the people under study (Hesse-Biber and Leavy, 2011; Creswell, 2013: 166-167).

In line with the research question and design of this study, participant observation was chosen as one of the primary methods of data collection. This method was useful in this study for two main reasons. First, participant observation gave me first-hand experience of the micro-actions informal collectors employed to address challenges or source opportunities in their daily activities. Secondly, it allowed me to directly observe what was often not captured in interviews, in the natural settings where informal waste activities were carried out (for example, in their use of bins, commercial premises, and scrap yards).

Participant observation took place over approximately 90 field visits at various sites in Cape Town, and occurred in two phases. The first phase was exploratory, with initial field visits focused on two groups of collectors; those who worked on the streets of affluent areas and those who worked in townships. Initial interest in these two groups came as a result of background reading of informal collectors in an international as well as local context and various links with NGOs. This phase involved 'hanging about' with street collectors and having informal conversations on waste collection days, while they rummaged through bins. Similarly, in the case of township collectors, data acquisition involved visiting their homes and having informal conversations, to understand what their work involved. During this phase I learned that there are different levels of operation in informal waste collection in Cape Town. On this basis of this, I categorised informal waste activities according to where they operate and how their work is organised. This provided a basis for a set of questions that informed the second phase of observation.

The second phase of observation, which built on the preliminary findings of phase one, was more focused. The research expanded to include carthorse and *bakkie* operators. Whereas the first phase involved direct observation, such as by observing collectors while they carry out their work, in the second phase I took on an active role and participated in their activities. It is during this phase that I learned how trolleys, carts, horses, *bakkies*, and storage spaces all play a role in organising the

workspaces, as well as the support networks informal collectors relied on. Working on the streets with *skarelaars* in particular provided me with first-hand experience of how collectors appropriated the trolley as a small-scale waste infrastructure, delegated waste activities such as mobile sorting and temporary storage to it, and how this affected the spaces in which they operated. This set the stage for the further exploration of the role of other forms of transport such as the carthorse and the *bakkie*, as well as storage facilities, such as old baths and skips, in regulating the activities of 'carties' and *bakkie* brigade operators.. Another example of being actively involved was by participating in 'ride alongs' with *bakkie* operators as they went about their daily activities. This experience provided me with insights into the lives of *bakkie* operators and their work at commercial premises. In addition I also participated in planning sessions for meetings, attended planning session for meetings with local government, all of which were forums where informal collectors engage with local government. Notes were taken throughout these field visits.

Importantly though, there were considerable challenges in taking notes in the field. Primarily, these were practical. Note taking during observation, particularly on the streets, was challenging as many were suspicious of this activity. There were several instances where *skarelaars* asked that I show them what I had written in my notebook. Although this was challenging, it also created an opportunity to verify and make sense of what I observed.

### 3.4.2 Interviews

Interviews are considered one of the essential sources of data collection in case studies (Stake, 1997; Yin, 2009). The practice has a long history in social science and is considered a significant tool for carrying out qualitative research. Interviews are considered social encounters that allow one to tap into a world of individual experiences, producing retrospective (or prospective) accounts of the past, present or future actions, feelings and thoughts (Gubrium and Holstein, 2001; Rapley, 2007). Interviews, as a method of data collection in qualitative research is useful for the following reasons: if a researcher is interested in a specific topic and wants to gain

information from individuals, interviews allow one to produce 'thick descriptions' of a particular topic, allow one to access information that is not directly observable, and also allow one to access subjugated knowledge (Creswell, 1994; Stake, 1995; Rapley, 2007; Hesse-Biber and Leavy, 2011).

In addition to participant observation, interviews were chosen as one of the primary sources of data collection in this study. Interviews were well suited for this study because it allowed me to access information that I was not able to directly observe, such as how informal work is organised on the streets of Cape Town from various perspectives. Secondly, interviews were particularly useful in understanding the actual experiences of *skarelaars*, carthorse operators and *bakkie* operators and the conditions that enable or constrain their work. Third, interviews were quite useful for officials from the waste management unit of the City of Cape Town, industry representatives, non-profit organisations (NPO) and other representatives who did not have a lot of time at hand.

The interview data was collected at different stages during the data collection process. Though it was an on-going endeavour, interviews occurred in three phases. The first phase was exploratory and involved developing a broad understanding of how the waste management system in the City of Cape Town was organised and understanding the role of informal collectors in the system. In this phase, the first round of interviews was with the Waste Minimisation Unit at the City of Cape Town. This round also included a round of preliminary interviews with *skarelaars* and some *bakkie* operators. The second phase of interviews was more focused, primarily for two reasons. Firstly, and after the initial round of interviews, questions were refined to address emerging issues. Secondly, interviews were more focused on issues that were not clear during observation. This round included interviews with carthorse operators and *bakkie* operators. The third phase of interviews focused on addressing gaps in the data that emerged during the process of data analysis. This round of interviews included interviews with City Improvement District officers and non-profit organisation representatives.

Interviews in this research project were in-depth conversations and semi-structured, involving open-ended questions (Ayres, 2008). The semi-structured nature of interviews allowed for new ideas and themes to emerge and was useful for building an understanding of how informal waste activities are regulated. Interviews were usually face-to-face with individuals, at a place convenient for the participant. Interview locations varied from formal office settings with beautiful paintings, streets with foul smells of garbage, to private homes or shacks of informal collectors with waste neatly stored in the backyard or under a table in the living room. Having conducted interviews at such various settings and locations in the city provided me with insights into understanding the realities of those who work with waste. For *skarelaars*, interviews took place while they were rummaging through bins. This was particularly useful as it allowed one to directly observe how informal collectors work on the streets, as opposed to meeting them at the nearest buy-back centre (see Benson and Vanqa-Mgijima, 2010; Schenck and Blaauw, 2011). However, the only disadvantage of doing so is that interviews were rushed, as *skarelaars* work swiftly. On the other hand, *skarelaars* who live in townships were interviewed at their homes. Since carthorse operators do not rummage through bins and their work is faster moving than *skarelaars*, interviews took place during clinic hours at the Cart Horse Protection Association (CHPA), while they were waiting for their horses' shoes to be fitted or were undergoing veterinary check-ups. Like *skarelaars* and carthorse operators, *bakkie* operators work six to seven days a week. As a result of this, interviews occurred while they were working 'on the road', with the exception of some that took place at their homes. Interviews for the City of Cape Town, NPOs and NGOs and industry representatives were conducted at their place of work.

Interviews lasted between 45 minutes and two hours and were generally recorded. While most of the interviews were recorded, there were instances where some *skarelaars* and carthorse operators did not want interviews to be recorded and preferred note-taking during the interview. This was particularly the case on the streets, because *skarelaars* were generally suspicious and even though I reassured



them that it was for research purposes, they insisted on the note-taking. There were also instances where some *skarelaars* requested that I regurgitate the interview notes, as they were serious about not being misrepresented.

In line with the case study design and grounded theory approach, interview participants were selected in two ways: purposive sampling and snowball sampling. Purposive sampling involves making a set of strategic choices about whom, where, and how one does research, and is tied to the research objectives (Palys, 2008). In other words, the sampling procedure involves selecting particular participants that will best help in addressing the research objectives and questions of a study. There are different types of purposive sampling, such as stakeholder sampling, extreme or deviant case sampling, typical case sampling, criterion sampling, and maximum variation sampling (Palys, 2008). For the purposes of this study, I employed the criterion sampling procedure, which involves searching for cases or individuals who meet a certain criterion (Palys, 2008). This sampling procedure comprised of selecting participants at various levels of formal and informal waste constituencies such as a) informal waste collectors engaging in very informal to semi-formal activities, and b) representatives from the local government waste minimisation unit, local NPOs and NGOs, and industry representatives. These participants were essential in understanding how informal waste activities are regulated in the city. In addition to purposive sampling, snowball sampling was used as a means to pursue the goal of purposive sampling (Morgan, 2008). This sampling procedure involved interviewing an initial set of informal and formal actors who served as informants for potential participants (Morgan, 2008). For instance, the initial set of informal collectors shared information with other individuals who also engage in informal waste collection activities. The same approach was employed with local government and NPO, NGO representatives and Community Improvement Districts. This procedure was particularly useful in locating informal collectors on the streets and townships. A total of 48 interviews were conducted employing these sampling procedures. See Table 2 for a breakdown of the interviews that were conducted.

**Table 2: Breakdown of interviews**

<b>Type of Participant</b>	<b>Number</b>
<i>Skarelaars</i>	<b>20</b>
<b>Carties</b>	<b>10</b>
<b>Bakkie Brigade Operators</b>	<b>7</b>
<b>Local Municipality</b>	<b>4</b>
<b>Non-Profit Organisations</b>	<b>5</b>
<b>City Improvement Districts</b>	<b>2</b>

As much as using interviews was beneficial for the study, they also came with numerous challenges. One of the major challenges of using interviews concerned the issue of ‘insider vs. outsider’ status. As an Afrikaans-speaking ‘Coloured’ female I obtained insider status because speaking the same language facilitated access and participants felt comfortable expressing themselves in their first language. Although I was able to conduct interviews in Afrikaans I was also an ‘outsider’ as I did not have an understanding of some of the slang words and phrases that participants used during interviews. However, I was always able to ask participants to explain the meaning of the words or phrases in the context of what they were doing.

In relation to the ‘insider vs. outsider’ status, establishing trust with participants was challenging at times. Trust was a recurrent issue, particularly with *skarelaars* who worked on the streets. Although I met with street *skarelaars* and established a rapport before interviews, there were a number of instances where they did not trust the relationship.

Many of the participants in the study were Xhosa speaking and, although most were able to converse in English there were instances - especially with the

older women who participated in the study - where participants could not speak English. In these instances I had a translator who assisted with interviews. However, there were instances that the translator did not convey the questions correctly. In these instances, I had to go back and clarify some questions and answers.

### 3.4.3 *Questionnaire*

In addition to participant observation and interviews, data was also collected by means of a questionnaire. Surveys provide quantitative or numeric descriptions of trends, attitudes, or opinions of a population by studying a sample of that population (Creswell, 2009). It can also be used as a method or design. For the purposes of this study, questionnaires were methodologically employed. The purpose of the questionnaire was a) to use the information as a basis for interview questions and b) to not generalise or make claims about the informal waste collector population in Cape Town, but rather to gain a better understanding of the common challenges and opportunities that are associated with collecting waste on a micro level.

In total, the questionnaire was administered to 67 informal collectors that worked in township areas and affluent neighbourhoods in the city. Participants for the questionnaire were selected in two ways; employing purposive sampling and snowball sampling. The purposive sampling procedure was employed at the outset of the questionnaire and involved recruiting and selecting participants on the basis of particular characteristics, such as that they had to be involved in informal waste collection (Palys, 2008). In addition to this sampling procedure, snowball sampling involved getting contacts from the initial group of participants who participated in the pilot phase of the questionnaire. The sample included a combination of males and females of different age groups.

The questionnaire was administered in 2011. This was a follow up from the initial participant observation with informal collectors working on the streets and those working in township areas. It was administered in two phases. The first phase

was the pilot phase that took place in Samora Machel, Philippi with a small group of informal collectors. The purpose of phase one was to test the questions with a small group of informal collectors in order to clarify, modify and simplify questions before administering it to a larger group. For example, one of the questions in the initial questionnaire asked how much money is made from recyclables per week. Whilst the questionnaire was administered I discovered that majority of the informal collectors started off by calculating this per day instead of per week.

The second phase was rolled out to a broader group that included those working on the streets as well as those working in township areas. It involved contacting street and township participants by phone. For those informal collectors working on the streets I scheduled a time that was appropriate for them; this was usually on the day of waste collection in different neighbourhoods. Participants were informed of the aim and objective of the study and we arranged when and where to meet. The questionnaires were administered to participants from different areas, such as Gugulethu, Khayelitsha, Mfuleni, and Samora Machel. To make this labour manageable, a questionnaire was administered at Philippi Business Place, a central venue that was easily accessible, being a public transport interchange. A few questionnaires were also administered in the homes of informal collectors. For informal collectors working in affluent neighbourhoods questionnaires were administered on the streets while they were carrying out their work.

The questionnaire addressed the following issues:

- Amount of income: The amount of income that informal collectors working on the streets earned per day.
- Types of materials: The types of materials that were collected and the areas from where they were sourced.
- The type of transport: the means of transport informal collectors used to transport their waste.

- Spaces of waste collection: Information about where informal collectors carry out collection.
- Information about whether informal collectors work individually or in a group.
- Information regarding to whom informal collectors sell their materials, such as middlemen or buy-back centres.

Although the pilot phase of the questionnaire contributed to refining and clarifying certain questions, it did not present any challenges in terms of the literacy of participants. All of the participants during the pilot phase were able to read and write. However, a number of those who participated in the second phase were not able to read and write. In these instances I sat down with individual participants carefully explaining the questions and filling out the questionnaire.

Another challenge was the issue of language. Even though the majority of those who participated in the pilot phase of the questionnaire were able to speak and understand English some could not, particularly the older ones in townships. In this instance, a translator assisted with Xhosa translations. The translator and I sat with each participant and explained the questions in Xhosa. In other instances where participants spoke Afrikaans, questions were asked in English and some asked if they could answer in Afrikaans.

#### **3.4.4 Documents**

Documents are an important source of evidence in case studies (Yin, 2009). It can be considered as situated products and take many forms, such as architectural drawings, books, paintings and so forth (Prior, 2004). Documents are useful in case studies for a number of reasons - they provide specific details to corroborate information from other sources, are useful for verification of personal details, and one can draw inferences from documents (Yin, 2009).

The documents in this study were selected on the basis of their relevance for the study. Documents included annual reports, newspaper clippings, community newsletters, minutes of meetings, email correspondence, government documents such as bylaws and municipal policies, and other studies of informal waste collection in Cape Town. Documentary analysis took place throughout the research process and was useful for the following reasons. First, in order to understand the policy context in which informal collectors operate in Cape Town it was important to analyse key bylaws (this was particularly relevant for carthorse operators and *bakkie* operators). Secondly, documents such as newspaper clippings, community newsletters of organisations aided in the description and categorisation of informal collectors. Thirdly, it allowed me to triangulate different data sources, such as qualitative data and corroborate information. Documentary sources added a lot of value and complemented empirical data of this study.

#### 3.4.5 *Audio and Visual Materials*

In order to add value to participant observation and interviews, I made use of audio and visual materials, such as photographs and documentaries (Keegan, 2008; Yin, 2009). Photographs were taken as part of participant observation to capture where and how informal collectors carry out their work. Keegan (2008) refers to several advantages of utilising audio and visual material as research data. First, they provided the opportunity of capturing the different forms data, documenting features such as transport and the wide range of storage facilities that are used in informal waste work. In addition, it also allowed me to visually capture the experience of working on the streets of affluent neighbourhoods and townships. The visual data assisted me in remembering finer details regarding relationships and activities during participant observation and interviews, thus offering visual cues to an otherwise verbal account of activities (Keegan, 2008; Silverman, 2010). Secondly, photographs were advantageous as they complemented verbal conversation and provided a holistic understanding of how informal work takes place on the streets

and at different spaces in the city (Keegan, 2008). For instance, the photographs complemented discussions of why and how *skarelaars* modified their trolleys.

Like photographs, documentaries also served a useful purpose for this research project because it provided background information and a starting point for fieldwork. In other instances, it was used to deepen my understanding of the living and working conditions of informal waste collectors.

The procedure for taking photographs was as follows: I spent a considerable amount of time with individuals before taking pictures. If I wanted to take a photograph I would ask for permission first and explain the purpose of the photograph for my research. This was quite useful as many *skarelaars* were suspicious of my taking photographs as many of them were concerned that these would be published in a newspaper.

Although taking photographs did not present any challenges there were concerns, particularly from those *skarelaars* who worked in affluent neighbourhoods, questioning where these photographs would to be used. In one instance a *skarelaar* who worked in Observatory was reluctant to be photographed, because of his previous experience with a journalist from a local community newspaper. He took the picture out of his pocket and said that the journalist did not ask for his permission to put it in the newspaper, he then said 'you can take pictures of the bags of waste on the trolley but I do not want to be in the picture'.<sup>5</sup> In another instance a *skarelaar* agreed to be photographed on condition that I edit his face out of the picture. He insisted that I show him the edited version of the photograph. Interestingly enough, *skarelaars* in townships were more eager to be photographed, while it was a little more difficult with those working on the streets.

### 3.4.6 Social Media

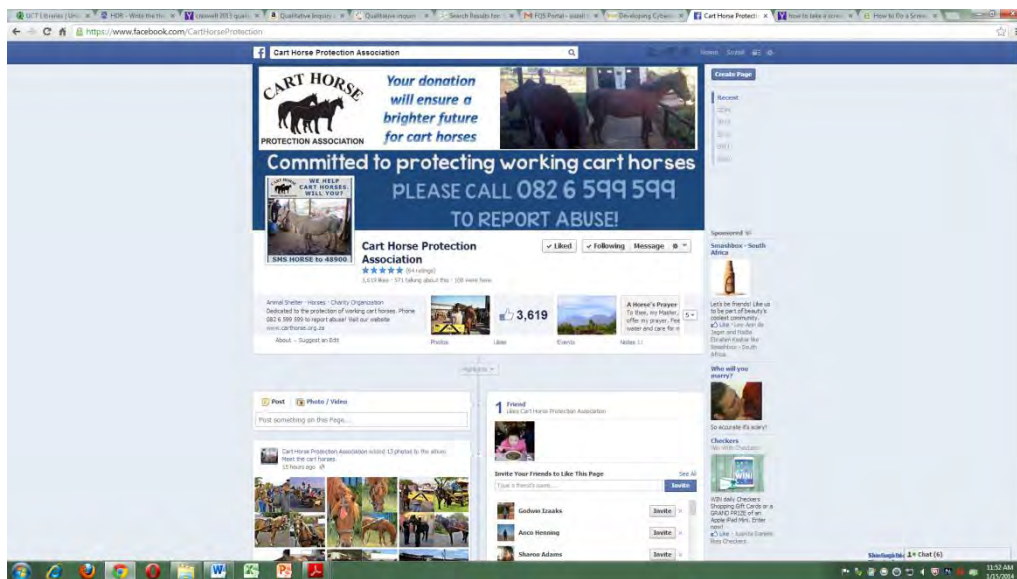
Social network sites such as Facebook and Twitter were another useful way of collecting data in this thesis. I followed the Carthorse Protection Association's

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<sup>5</sup> Interview 2 (2010, October 25).

(CHPA) Facebook and Twitter pages (see Figs. 1 and 2). These pages were particularly useful for understanding how the interactions between carties and carthorses were regulated. The sites are regularly updated by CHPA, posting the latest incidences of abuse and neglect. It was also used by interested members of the public to report abuse. The following is an example of a member of public posting a comment on Facebook reporting abuse:

'I can understand how people have such a desperate need to make a living, but, when it comes at the expense of a small pony, painfully undernourished, overloaded and harnessed in a torture device, covering a terrain from Phillipi through Wynberg, to Plumstead, pulling a cart that is loaded with a heavy wrought iron gate and other scrap, no water, a bag of grass, straining at a bit causing it's mouth to bleed.....I had no choice but to intervene.....'<sup>6</sup>



3.4 Figure 1: Carthorse Protection Association Facebook Page<sup>7</sup>

<sup>6</sup> Facebook Post (2014, September 14, 3:00 AM).

<sup>7</sup> Available: <https://www.facebook.com/CartHorseProtection> [2014, January 15].





**Figure 2: Carthorse Protection Association Twitter Feed<sup>8</sup>**

### 3.5 Data Analysis and Interpretation

In this section, I outline the steps that were undertaken to make sense of the data. Data analysis is characterised as the process of making sense or meaning of data (Hesse-Biber and Leavy, 2011). There is no exact point where analysis ought to start and end in the research process, but is rather a process that occurs throughout the research (Stake, 1995). It is also characterised as an iterative process of moving back and forth between data collection and analysis and theory (Layder, 1998; Charmaz, 2005; Hesse-Biber and Leavy, 2011). Data analysis involves the following steps: data preparation, organising data into codes and categories, representing the data, and forming interpretations (Hesse-Biber and Leavy, 2011; Creswell, 2013).

In line with constructivist approaches to grounded theory, this study did not follow the rigorous procedures of grounded theory data analyses of earlier theorists such as Glaser and Strauss (1967). Instead it loosely followed Charmaz's (2005) framework of analyses that highlights the iterative process between data collection and analysis. By moving back and forth between data collection and data analysis I was able to refine analyses in order to sharpen my discussion of how informal waste activities are regulated. In light of this, the process of data analysis in this study

<sup>8</sup> Available: <https://twitter.com/Care4CartHorses> [2014, January 15].

involved two steps: a) preparing the data for analysis, and b) coding, mapping and interpretation of data.

### ***3.5.1 Data Preparation and Transcription***

Data organisation is the first step in the early stages of analysis. It involves organising different types of data and preparing it for data analysis (Creswell, 2013). As outlined in the above section participant observation, interviews, questionnaire, documents and audio-visual materials were methods of data collection in this study. Written notes were recorded during participant observation. Upon returning from fieldwork these notes were rewritten. Interviews were recorded with a digital recorder and transcribed during the data collection process. Findings from questionnaires were categorised numerically. Photographs were downloaded from the memory card, sorted into categories and edited. Findings were collated and electronically organised on a computer.

I read through the data line by line during the data collection phase and made notes or 'memos'. The latter entailed making notes in the margins of interview and field notes and writing descriptions under photographs (Creswell, 2013). In line with a grounded theory approach, the initial memos was useful because they assisted in refining interview schedules and focused observations for new ideas that needed further exploration or authentication of information from observations in interviews.

### ***3.5.2 Coding, Mapping and Interpretation***

The above process of writing a story from the start of the data collection phase and throughout data collection assisted in the development of codes. The process of coding involves identifying meaningful chunks or segments of textual data (derived from interviews, observation, documents) and assigning a label to each of these (Hesse-Biber and Leavy, 2011; Creswell, 2013). Coding is the analysis strategy qualitative researchers employ to assist them in identifying themes, patterns and concepts that exist in data (Hesse-Biber and Leavy, 2011: 309). There are different procedures of coding depending on the research approach and research question

(Hesse-Biber and Leavy, 2011; Creswell, 2013). For the purposes of this research I used 'open coding', a grounded theory approach (Hesse-Biber and Leavy, 2011; Creswell, 2013). It involves examining the text from interviews, observational reading of the data line by line and systematically coding each line (Hesse-Biber and Leavy, 2011; Creswell, 2013). The coding process involved printing out interviews, notes from observations, and descriptions of photographs and reading through it line by line, coding each paragraph manually. Following this, a set of descriptive codes were created through highlighting verbatim quotes from interviews, notes of observation and photographs (Hesse-Biber and Leavy, 2011). Following the descriptive coding process I also drew out a set of analytical codes. Analytical codes, unlike descriptive codes are not tied to interviews or observation notes but relies on the researcher's insight for drawing out interpretations (Hesse-Biber and Leavy, 2011). For example 'regulatory strategies' were identified as an analytical code serving as an interpretation of the different strategies informal collectors employed to improve their livelihoods. Subsequent to this, a story was constructed based on the following broad questions: what is going on? what are people saying? what are people doing? where are they doing it? and how are they doing it? This set the scene for comparing data through iteration, akin to a grounded theory approach, where I looked at other informal collectors operating at different levels in order to compare it to codes that had I created, which led to the creation of preliminary themes.

In addition to coding, I also made use of mapping as a technique to further flesh out and support the empirical story I was constructing. Mapping was particularly important for including the non-humans in the analysis. For the purpose of this process, the work of Clarke (2005) was particularly relevant as it is in line with a grounded theory approach. In her attempt to nudge grounded theory further into a postmodern direction, Clarke (2005) created multiple mapping procedures:

'...to further enable, sustain and enhance the shift through situational analysis...that address demands for empirical understanding of the

heterogeneous worlds emerging from this “fractured, multi-centered discursive system” of new world orderings...’ (Clarke, 2005: 4).

Clarke (2005) suggests situational maps as one form of mapping the heterogeneous world of humans and non-humans. There are three main types of situational maps and analyses. These include: situational maps as strategies for articulating elements in a situation and examining the relations among them; social world/ arenas maps as cartographies of collective commitments; and positional maps as simplification strategies for plotting positions articulated and not articulated in discourses (Clarke, 2005: 5). There was no extensive application of any of these maps or analyses. However, loosely employing analytical questions ‘who, what, how, and why’ (Clarke, 2005) was useful to deepen my understanding of what created conflict or contestation in the daily lives of informal collectors.

During the coding process I identified a number of incidences where conflict or contestation occurred amongst informal collectors and other actors. For these incidences I made use of situational mapping, using key question words such ‘who and what’ matter in a situation or a conflict? If the situation being mapped is the workspace of a *skarelaar* on the street, for example, then the situational map included key human actors such as the *skarelaar*, the local residents, Community Improvement District officers, as well as non-humans such as the wheelie bin, the trolley and the type of material that is being collected. Once this process is completed the ‘how’ question was used to further elaborate and expand the situation. This was useful for understanding the conditions that enabled or constrained informal collectors. In addition to the interview and observation notes, photos and social media sites like Facebook played an important role in enhancing the mapping of humans and non-humans in various spaces across the city where informal collectors carried out their work.

The aim of the coding and mapping phase was to make sense of the meaning of the data in order to create themes. Themes in qualitative research are broad units

of information that consist of several codes combined to form a common idea (Creswell, 2013). Through the continuous process of memo-ing and reflecting on data, a set of preliminary categories were created. From this process, six core themes were developed. For instance, one of the themes that emerged through the process of coding was 'regulatory strategies in informal waste economy', which consisted of codes such as 'competitive strategies' and 'coping strategies'. This theme was largely inspired by the sustainable livelihoods framework that makes reference to the coping and adaptive strategies people employ in order to respond to shock and improve their circumstances in the long term (Farrington et al., 2002). This constant comparative method is characteristic of grounded theory and was useful in refining categories until no new categories emerged. Other preliminary themes that emerged through the process of mapping were 'multiple spaces of regulation', which included mappings of different places where informal collectors carried out their work.

In addition to manual or handwritten memo-ing and coding I also made use of an online data analysis programme called Dedoose. Computer-based software can play an important role in facilitating and enhancing data analysis. However it has also been criticised, as it often hampers the data analysis process (see Hesse-Biber and Leavy, 2011). I found the Dedoose online data analysis programme helpful since it was able to store my data and it allowed me to further refine my analysis and revise existing themes. The use of this online data analysis tool enhanced my ability to analyse data and complemented the existing data analysis process.

Interpretation in qualitative research involves abstraction beyond the codes and themes to the larger meaning of the data (Creswell, 2013). As explained above, it is clear that interpretation took place throughout the research process. This is in line with a grounded theory approach, where interpretation happens simultaneously with data collection and analysis (Hesse-Biber and Leavy, 2011). Interpretation was further enhanced through the presentation of research findings at various academic

platforms, such as seminars and workshops, allowing for testing ideas and concepts, which led to identifying gaps in order to refine analysis.

### **3.6 Ethical Consideration**

Schwandt (2007a) explains what is required of social researchers for ethical practice:

Consider the reasons for their own and other's actions during the conduct of research, assess the validity of those reasons, and reform their actions against the backdrop of some systematic and thoughtful account of human responsibility (Schwandt, 2007: 90)

There is a wide array of ethical principles in qualitative research, such as avoiding deception, avoiding harms or risk, informed consent, confidentiality, anonymity and so forth (Ryen, 2004; Schwandt, 2007b; Silverman, 2011; Creswell, 2013). Despite careful planning and consideration one has no control over the ethical issues that emerge during qualitative research. Ryen (2004: 218) nicely captures this: 'fieldwork is definitely more colourful and challenging than most published versions'. Even though a reasonable amount of literature on informal waste collection was covered before fieldwork was conducted, none of it prepared me for the 'colourful and challenging' experience of researching informal waste activities in various spaces across Cape Town.

Research was conducted in accordance with ethical guidelines and clearance of the University of Cape Town Law Faculty Research Ethics Committee. Following these guidelines, arranging and conducting interviews or field visits required participants to give their informed consent. Informed consent refers to the right of participants to know that they are being researched, the right to be informed about the nature of the research, and the right to withdraw from the research at any time (Ryen, 2004; Schwandt, 2007b; Creswell, 2013). It usually occurs during the initial phase of the research process when the researcher makes contact with participants. The process of informed consent was different for formal and informal actors. For local municipal departments, NGO, NPO, the recycling industry and Community

Improvement Districts, the initial contact involved an email or a telephone call where I introduced myself and gave a full description of the research project, and asked if they were available for an interview. Once the prospective interviewee agreed to participate in the research, an interview was scheduled for a time and at a venue that suited them. At the scheduled interview, the participant was given an information sheet and a written consent form (see Appendix for Consent Form) both which provided clear details of the research and clearly outlined the considerations regarding voluntary participation, confidentiality, privacy and anonymity. Interviewees were then asked to sign the form. In such instances written consent was granted.

However, the process was different for informal actors. As discussed earlier in the method section, access to informal collectors from townships was facilitated through a gatekeeper. At the scheduled meeting I gave a full description of the research project and invited participants to write their contact details down if they were interested in participating. Following this meeting I scheduled individual visits with participants that indicated interest. At these individually scheduled meeting the same procedure was followed, as outlined above for formal actors. However, I discovered that some of the collectors were not able to read and write. In these instances, I explained informed consent, highlighting the following considerations: voluntary participation, confidentiality, privacy and anonymity in Afrikaans and Xhosa, the latter with the help of a translator. Participants who were not able to read and write gave verbal consent.

A similar process was followed with informal collectors who worked on the streets of affluent neighbourhoods. Although a full description of the research project was given, informal collectors working on the streets were suspicious for various reasons as discussed elsewhere in this chapter. In other instances, collectors listened carefully and said that they would participate on certain conditions. Often the conditions involved buying coffee, food and not taking photographs. With informal collectors working on the streets a trade-off was requested in almost all

cases. For example, one collector told me that he did not have time for researchers and if I wanted to speak to him I had to pay him in cash. I informed him that I was unable to pay him, whereupon he smiled and said 'then I am not talking to you'. In most instances, collectors gave verbal consent to participate in the study, as there were many who refused to sign any forms even though they were able to read and write. From this it was evident that more negotiation was necessary for informal collectors who worked on the streets, whereas the process was slightly easier with those operating in townships.

Confidentiality is another key principle of ethics in social research and refers to the obligation of the researcher to protect the participant identity, places, and locations of the research (Rye, 2004). At scheduled interviews with formal actors and at the first field visit with informal collectors I assured participants that all information that they provided would remain confidential and not disclosed in any published form. In doing so, I explained that individual names would not be used, that the identity of participants would be coded and that the data would be stored electronically with a password.

However, while the confidentiality of spoken words was assured, photographs, particularly those of informal waste activities on the streets raised some issues. Before taking photographs of informal collectors and their activities I explained that the photographs were for research purposes and confidentiality safeguards were to be employed. While informal collectors in townships were willing to have their photos taken, informal collectors working on the streets were more resistant. For instance, one informal collector made it clear that he did not want photos to be taken of him; he said that I could take photos of his bags of waste, but not of him. In another instance, an informal collector working on the streets asked me what measures I would take to edit the photos. I explained to him that I would use a computer program to crop the photo so that the photo would only depict him from his neck downwards. He agreed to be photographed and requested that I return with the edited photo so that he could see whether I had done what I had



promised. In other instances, informal collectors agreed to be photographed on condition that I pay them a small fee of R5.

Trust refers to the relationship between the researcher and the participants, and to researcher's responsibility not to 'spoil' the field for others (Ryen, 2004). Trust was achieved through various methods of rapport building, including spending time with participants, and assuring confidentiality. Establishing trust with informal collectors working on the streets was particularly challenging, as they were generally suspicious. As much as I was constantly negotiating my identity as a researcher, informal collectors were curious and wanted to know more about my personal life; males, for instance, often asked if I was married, or if I had a boyfriend. In all cases I replied that I was not married, but had a boyfriend.

In summary, this discussion on ethical considerations show that as much as ethical principles are highlighted at the beginning of the process, one is constantly engaged in negotiating and renegotiating the terms of the relationship between the researcher and participants. The following section discusses the role of the researcher in the study.

### **3.7 Research Process: Reflexivity**

The need for researchers to acknowledge and reflect on the interaction between themselves, their research participants and the context is widely debated amongst grounded theory (GT) theorists (see Bryant and Charmaz, 2007 for a detailed discussion). The constructivist grounded theory approach recommend a 'reflexive stance', as such a stance informs how the researcher conducts the research, relates to its participants, and represents them in written reports (Charmaz, 2006; Bryant and Charmaz, 2007). With this in mind, this section reflects on the research process and how my interests, position, and assumptions impacted on the outcome of the research. I focus on the following: the politics of gaining of access, the politics of naming, and the role of the researcher.

### ***3.7.1 Politics of Gaining Access: Challenges and Triumphs***

The process of gaining entry or access to the research site is critical and determines the type of data collected (Hesse-Biber and Leavy, 2011). In this study, the process of gaining access to different types of informal collectors involved gatekeepers. These gatekeepers were central in gaining access to research sites and participants (Kawulich, 2005; Reeves, 2010; Hesse-Biber and Leavy, 2011). There were layers of gatekeeping that had to be negotiated during the research process, each coming with a specific set of benefits and challenges. Initially I approached a homeless couple who were regularly rummaging through bins on waste collection days and slept under the subway not too far from where I lived. When approached, the couple appeared curious and suspicious at the same time, as they are used to going about their business without interruption. Although they were suspicious at first, the fact that I am from the same ethnic group ('Coloured') and spoke the same language (Afrikaans) facilitated access. These characteristics provided me with 'insider' status, but only to a certain extent. See below for an excerpt of my first encounter with the couple:

#### **Box 3.1: Excerpt of First Encounter**

After being woken up at 6:00 every Thursday morning by slamming wheelie bin lids accompanied by laughter and chatter of a group of men and women I decided to take out the wheelie bins of our residential complex on a Thursday morning. I unlocked the gate and a man immediately approached me and offered to help me with the bins. After bringing out the two wheelie bins from my complex I remained outside the gate and started talking to them as they were going through the bins. While watching them carefully opening the black bags I asked them what they were looking for in the bins. The woman replied by saying 'enige iets wat ons kan verkoop vir n paar sente' ('anything we can sell for a few cents') while the man

continued going through the bins, carefully taking out glass bottles, papers and magazines and putting it in a separate black bag. The woman assisted him while he was separating the waste and asked me what my interest in this was. I explained to her that I just wanted to know what they were doing with the waste and where they would take the waste after collection. She smiled and started explaining that they would sell it in Saltriver. She was quite interested in me and where I came from and that my Afrikaans accent is so different from theirs.

Following the initial encounter, I took out the bins the next collection day and was able to explain my research interest in what they were doing. The male was reluctant at first and wanted a clear explanation of the difference between a '*navorser*'<sup>9</sup> and a '*joernalis*'.<sup>10</sup> Even though I carefully explained this he was not totally convinced of my interest in them. The female was more receptive and it is through my conversations with her that I gained entry to the lives of many other informal collectors on the street. Reflecting on this process, it became clear that, although the work of *skarelaars* took place in a public setting, the world of informal waste collectors was difficult to access. Suspicion, a general lack of trust of 'outsiders', coupled with previous experiences of journalists who contributed to the strong wall around the perimeters of the trolley and the bin.

While gaining access to *skarelaars* on the streets were challenging, the opposite was apparent for those working in townships. One of the main reasons why access to township collectors was easier was because it was done through a local NGO that introduced me to informal collectors. Subsequently, in explaining my research to the NGO a formal meeting was arranged with collectors from different township areas where I was able to introduce myself and the aims and objectives of my research. Although this gave me access to a number of informal collectors, I later learned that

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<sup>9</sup> Afrikaans word for researcher.

<sup>10</sup> Afrikaans word for journalist.

collectors thought I was affiliated with the NGO and were careful of what they said in my presence. This was challenging at first, as some collectors even referred to my presence as ‘working for James’<sup>11</sup>.

My first encounter with carthorse operators was arranged through a gatekeeper who lived in an informal settlement where a large amount of males made an income from scrap metal collection. Similar to *skarelaars*, gaining access to carties was also facilitated through ethnicity and language, i.e. being a ‘Coloured’, Afrikaans-speaking female. However, being female and unmarried was challenging because the carthorse industry is male dominated. The responses of operators varied from addressing me as ‘Mevrou’<sup>12</sup> to making advances and flirtation. For instance, one carthorse operator curiously asked if I was married and had children, and when I said ‘no’, he made a remark questioning how ‘such a beautiful lady’ like me could not be married. The gatekeeper stressed on a number of occasions that I only speak to carthorse operators at the premises of Carthorse Protection Association. He also advised against directly approaching carthorse operators on the streets. When I asked him why, his response was that he was concerned about my safety.

Gaining access to *bakkie* brigade operators was facilitated through an operator, James, whom I met at a meeting of township ‘pickers’. He introduced me to his network of *bakkie* operators and also accompanied me to the initial meeting with operators. Observation of operators took place during ‘ride alongs’ with James and one other operator who allowed me to accompany them during their daily activities of collection and trading of recyclable materials.

### 3.7.2 *Politics of Naming*

As discussed in Chapter one, categorising informal waste activities were critical to the outcomes of the study. The categories ascribed to the different types of informal collectors emerged in a number of ways; the terms ascribed to the informal collectors were the words they used to describe their work. In Cape Town, informal

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<sup>11</sup> Not his real name.

<sup>12</sup> Afrikaans word for Mrs., but also used as a way to show respect.

collectors refer to their activities by various names - recycling, collecting, mining, *minza* (a term used by reclaimers meaning 'trying to survive'), *ukuzizamela* (meaning trying for yourself), *grab-grab*, and work (Benson and Vanqa-Mgijima, 2010: 1). The most common term used is '*skarrel*', an Afrikaans slang word meaning 'always on the look-out for something', 'scrounging around' or 'struggling but doing something about it' (Benson and Vanqa-Mgijima, 2010: 1). It is also used colloquially to refer to the notion of hustling, in the colloquial American English sense.

The term is unique to Cape Town and its meaning is often overlooked by researchers. For example, Benson and Vanqa-Mgijima (2010) preferred terms, such as 'reclaimers' instead of unpacking its meaning. Although these terms are useful, it masks the meaning that those who use it daily ascribe to their activities. It was also interesting that most informal collectors on the streets did not use 'reclaimer' or 'reclaiming' as words to describe their activities, but rather used the terms '*skarrel*' to refer to their activity and used the term '*skarelaar*' as the person who engages in the activity. For this reason, when I first encountered the word during fieldwork I looked up its meaning in a bilingual dictionary. According to Afrikaans Bilingual Dictionary (1966) the word '*skarrel*' is a verb and in English means to rummage, ransack, and scatter (Bosman et al., 1966). Each of these words in one way or another refers to the unsystematic, hurried fashion of stealing or doing something.<sup>13</sup>

Being an Afrikaans first language speaker gave a different perspective and understanding of the term. I learned that in the context of informal waste collection the term does not necessarily mean an unsystematic or hurried practice but should rather be considered as a highly systematic practice. *Skarelaars* engage in a set of activities that is highly structured and organised. What may seem disorderly to an outsider is in fact highly ordered in nature. This is reflected in how the word is often used, for example '*skarrel is 'n wet*', which directly translates into 'hustling is a law', or hustling is an order of doing things. For instance, operating with trolleys on the streets were not a hurried or disordered practice, but rather involved a set of choices,

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<sup>13</sup> Ibid

like when to collect, what to collect and how it should be collected. Through the research this term gained a new meaning and a different type of agency. Informal collectors were not randomly looking around or scratching in bins, but rather engaged in a constant process of decision making. As the term gained new meaning to me, so too did the activity of rummaging through bins and the trolley that was used to collect the waste all became apparent as part of how order is constituted on a daily basis for an informal collector. Through the research process the term '*skarrel*' became an intricate part of how I came to understand the regulation of informal economic activities.

Like *skarelaars*, those informal collectors working with carthorses did not use the term 'reclaimer' to refer to themselves, but rather used the term 'cartie'. Interestingly, carties also refer to the activity of scrap metal as '*skarrel*', but did not refer to themselves as '*skarelaars*'. I learned that the word 'cartie' was not just an empty word, but was linked to family pride and honor. Many carties have inherited their trade from grandfathers who were horsemen in District Six. One cartie explained the tradition of how horses are hand down from generation to generation. He said that when he turned 16 his father gave him a horse and he plans to do the same for his son. For many carties there is pride in owning a horse. The ownership of a horse and using it for scrap metal collection is seen as an honourable means of earning an income. One cartie explained that even though he left school at a young age his love for horses kept him from becoming involved in criminal activities.<sup>14</sup> These interesting snippets of information emerged during Afrikaans conversations with carties. Through these Afrikaans conversations I also learned that the horse plays a very powerful role in the lives of carties. The horse was not just an animal or pet, but a friend and companion. For example, an older male who had been a cartie for many years recalled a story of one of his now deceased mares who took really good care of him. He would leave a bar late at night thoroughly intoxicated, get onto his cart and tell the mare to take him home. The mare would listen to his instruction

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<sup>14</sup> Interview 1 (2013, 28 June).

and bring him home safely.<sup>15</sup> This is but one story of the strong bond between carties and their horses. Although, the horses are a key part of how carties earn their income, the horses are also companions and friends to them.

While *skarelaars* and carties referred to their activity as '*skarrel*', *bakkie* brigade operators would use words such as 'operate', 'service', 'clients' to describe their daily activities. Some of them referred to themselves as a '*besigheidsman*' (Afrikaans expression for business man). The usage of this term to refer to their activities was important and, although waste collection was their key source of income, it was clear that this was a business and not merely a subsistence activity. As the carthorse was an important component for carties, so the *bakkie* was for operators. Being Afrikaans, and a woman of the same race as most of the collectors, played a critical role in the type of information that was collected from the participants.

### 3.7.3 *Researcher as 'Skarelaar' – the researcher in constructivist ground theory*

In addition to the politics of naming, I also use the term *skarelaar* to describe the subjective journey of my research and to reflect on the various complex entanglements between the insider and outsider, the formal and informal, and humans and nonhumans throughout the research.

My interest in '*skarelaars*' started after reading an article in the Cape Times that noted that waste can be a resource which can create wealth for poor communities (Ashton, 2008: 9). This later became the empirical focus of my PhD. The '*skarrel*' in this research involved becoming entangled with people and things and making a set of choices to understand how the world of informal waste collection works. This involved visiting the homes and many other spaces on the streets where informal waste collectors carried out their work. The following is a vignette of my field work experience:

#### **Box 3.2: Visiting the Fredericks Family**

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<sup>15</sup> Interview 4 (2013, June 28).

One of my first visits was to the Fredericks<sup>16</sup> family who started off collecting glass bottles with a trolley and now own a small buy-back centre. Entering the front door on the top floor of a block of flats in Belhar I felt as if I was entering the home of my family in Worcester. My first observation of the living room was that the tiled floors were shiny and the expression of '*mens kan van die vloere af eet*' [translated, one can eat off the floor] came to mind. The recyclable materials was neatly stacked and stored in the corner of the living room. Like most 'Coloured' families, the living room was the pride of the Fredericks family. The rest of the living room consisted of a wall unit with many pictures, certificates, and little glass ornaments with four matching couches. I immediately felt at home and continued the conversation in Afrikaans. Later on, we walked to the nearest shop where we bought '*vis en chips*'<sup>17</sup> for lunch. The busy streets bustling with the noise of children playing, young men and women sitting on the corner of the streets and women sweeping their yards or having conversations in their pyjamas and '*swirl kouse*' [translated: a swirl stocking; by placing a stocking on their heads at night or when doing chores, women retain a swirl in their hair] all seemed so familiar...I was 'home'.

Box 3.2 provides the basis for the first set of reflections about the insider-outsider entanglement. During the research I discovered that insider status and outsider status were not in opposition to one another. In fact the two were often entangled and I also found myself at various moments during fieldwork constantly moving back and forth between the two (Dwyer and Buckle, 2009). The feeling that I was 'home' was an indication that my own '*skarrel*' had started. Being an Afrikaans-speaking, 'Coloured' female who had grown up in a similar working class community gave me insider status. I had an innate understanding of and personal experience of how these communities work. I spoke the language and I could identify with each of the characters I described in Box 3.2. Each character represented a personal experience. Yet, I was constantly reminded of the outsider

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<sup>16</sup> Not their real surname.

<sup>17</sup> Afrikaans for Fish and Chips.



status when I was introduced as a researcher from the university. For example, once I had been introduced as a researcher, carties kept referring to me as '*Mevrou*'.<sup>18</sup> During interactions with carties I also observed how they would change the tones of their voices. I observed that when they speak to one another a different tone of voice was used, thus relegating me to outsider.

Another example of the entanglement of insider-outsider status is, although I shared similar personal experiences regarding hygiene, language, and race, I was an outsider to the world of waste collection. I was able to grasp the interesting facets of informal waste work through the spoken language, but had to negotiate in order to gain access to the inner world of waste collection. As mentioned earlier, those working on the streets were reluctant to share details about the work and more than once I had to build a certain level of trust before I asked questions about their work or take photographs.

The final set entanglements of insider-outsider status is my Afrikaans accent. Although I speak Afrikaans I have a different accent and participants would notice this immediately. In Box 3.1 I stated that the *skarelaars* immediately noticed the difference in my Afrikaans accent. Often the Afrikaans accent is what appealed to informal collectors, especially those living on the streets. At other times it was a source of suspicion and informal collectors, particularly for those working on the streets of affluent neighbourhoods. The constant movement back and forth between insider and outsider often left me in a space between. The in-between feeling was often confusing, but also allowed me to be critical and evaluate my own assumptions.

The next set of reflections on my subjective journey is about entanglements between the formal and informal throughout my research. I used various modes of transport to get around the city during my research. For example, during the time I was working in Philippi I used the Golden Arrow bus services to Shoprite (a central

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<sup>18</sup> Afrikaans expression for Mrs.

shopping area) and from there would catch a *Pela Pela*<sup>19</sup> to my destination. In this small act of travelling I learned that, just as formal conductors with uniforms of the Golden Arrow played a key regulatory role, the driver in the *Pela Pela* played a very similar role. By taking these taxis, I also learned that there was an order to this too. For example, taxis would have stickers that read, for example, '*I'd rather be late for work than early in the hospital*' or '*I like your perm but not against my window*'. These messages, as funny as they seemed, played a key role in regulating the behaviour in taxis. Through this process I learned that social order occurs in both formal and informal places – in different ways but with similar effect.

Another example of how entangled the formal and informal was throughout the research was when I would accompany a collector to a scrap yard. The scrap yard was a fascinating place, where the formal and informal often connected in various ways. There were instances where informal collectors were treated very badly. The constant move between the two made me realise how integrated and enmeshed the two are and how they often exist in harmony or in tension with one another. Another instance of spaces that connected the two was the wheelie bin – this connected informal collectors and CID officers or the police.

The final set of reflections on my own '*skarrel*' pertains to the entanglements between humans and non-humans. For example, I noticed how a man and a woman were pushing a trolley on a road close to where I live and at first I did not take note of the trolley. The next time I met the same couple and saw the man carrying the waste on his shoulder I asked about the trolley. The couple explained that the trolley was taken away from them. I asked why it was taken away and learned that the trolley was associated with criminal activities. At that particular moment the trolley was 'under the radar' of my research and did not fully comprehend how powerful it was. During another occasion I noticed how informal collectors in Belhar freely pushed their trolleys without interference. Upon asking one collector if they had any problems with trolleys in Belhar, she replied by saying that the only problem they

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<sup>19</sup> Informal sedan taxi services that operate in townships.

had is that people in the neighbourhood tended to associate the pushing of a trolley with being a '*bergie*'<sup>20</sup> (Afrikaans expression for homeless person). As a result of these interactions and observations the trolley took on a new meaning in the research process.

Reading Latour (2005) on actants played an important role in how I came to see the trolley, cart, horse, waste material, *bakkies* and storage facilities. With a growing understanding of the experiences of informal waste collectors on the streets, I became more and more aware of the actants and learned that these play a significant role in the lives of informal waste collectors. In many instances I had first-hand experience of how trolleys and the act of rummaging through a bin shaped the flow of events or noticed how carties were pulled to the side of the road by CID officers or the police. Through these experiences I came to learn how enmeshed and entangled the humans and non-humans are when it comes to waste work.

### 3.8 Conclusion

In this chapter, I explained and justified the research methodology and strategies of this study. The first section outlined the paradigmatic assumptions in order to position the research in an epistemological and ontological framework. It also discusses the rationale of a primarily qualitative approach to explore the main research question. The next section explained the relevance of a grounded theory approach with the view to contributing to existing literature of how informal waste activities - and broadly informal economic activities - are regulated. Furthermore, it discusses the rationale of a multiple case study method, the selection of cases and participants. The third section outlines the process of data collection, data analysis and interpretation that was loosely followed within the framework of a constructivist grounded theory approach. Lastly, this chapter discuss the ethical

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<sup>20</sup> An Afrikaans term, particularly Capetonian, term for homeless people. Note again the diminutive added on to the Afrikaans word '*berg*' (meaning mountain), originally indicating a person that sleeps rough on the mountains of Cape Town. Today, of course, they sleep rough in many other spaces in the city.

considerations and reflects on the interaction between the researcher, the participants and the context in this study.

The chapters (5 - 7) that follow represent the findings of this study and discuss how it relates to existing literature. Before presenting the findings and its relevance for the literature, it is useful to provide some background to the study, both to set the context and to demonstrate the various ways in which informal waste activities are regulated in Cape Town. This is the focus of the following chapter (4).

## **Chapter Four: Modes of Regulation in the Informal Waste Economy: The Cape Town Case**

### **4.1 Introduction**

Much has been written about 'waste pickers' working and living conditions on landfill sites in South Africa, yet there has been very little focus on informal collectors that collect elsewhere (Chvatal, 2010; Samson, 2010). There are a few studies that have focussed on collectors working on the streets of Cape Town (Langenhoven and Dyssel, 2007; Benson and Vanqa-Mgijima, 2010; Tischler, 2011), Durban (McLean, 2000) Johannesburg (Schoeman and Sentime, 2011), and Pretoria (Schenck and Blaauw, 2011; Viljoen et al., 2012). Although these studies are a useful resource for understanding the nature of informal waste activities on the streets of South African cities, they do not pay sufficient attention to how these activities are regulated. Keeping this in mind, the aim of this chapter is to contextualise informal waste collectors through defining who they are, what they do and how their work is organised. The purpose of the chapter is not only to provide a background for substantive chapters but also to pay close attention to the questions of who, what and how regulation is carried out. Each of these issues is critical for a better understanding of how urban informal activities are regulated.

Following this introduction, the next sections (4.2 and 4.3) draw on international research to provide a descriptive account of informal waste collectors in terms of who they are, what their role is in solid waste management, and how their work is regulated. The purpose of these sections is to contextualise the issue, but also to contrast the way in which informal waste activities are regulated in South Africa. The section following thereafter (4.4) deals specifically with the modes of regulation in the informal waste economy in South Africa and discusses how state and non-state modes of regulation shape the context in which informal waste collectors operate. The purpose of this section is to contextualise informal waste collectors in South Africa and how their work is regulated. Subsequent to this, section 4.5 focuses

specifically on Cape Town and discusses how informal waste activities are regulated. The final section concludes the chapter.

## **4.2 Modes of regulation in the informal waste economy: International debates**

Before embarking on a discussion of the various theories on how informal waste work is regulated in developing countries it is necessary to discuss who 'waste pickers' are and the role they play in solid waste management. Therefore what follows is a brief discussion of "waste pickers" are and their role in solid waste management.

### **4.2.1 *Who are 'waste pickers'*<sup>21</sup>?**

Millions of people worldwide earn their living from recycling waste on landfills or the streets in the cities of developing countries. As mentioned in Chapter One there are many different terms that can be used to refer to people who sort, separate and extract recyclable material from the waste stream. However, in 2008, the First World Conference of Waste Pickers in Bogota, Columbia rejected the term scavenger as derogatory and adopted the term "waste picker" as an umbrella term to refer to those earn a living from extracting recyclable materials from the waste stream (Bonner, 2008; Samson, 2009). Although "waste picker" is used as an umbrella term there are various terms in different languages that refer to the activity of extracting recyclable materials from the waste stream. These terms are often determined by the type of material that is collected and where collection is carried out (Medina, 2007). 'Waste pickers' mainly operate on landfills and streets and collect household or commercial waste. Although the nature of informal waste work differs across countries there are some basic categories of 'waste pickers' that relates to where they work, how they work and their affiliation with organisations and movements. Some of the common categories that have been highlighted in the literature (Ahmed and Ali, 2004; Wilson et al., 2006) and WIEGO (n. d.) include:

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<sup>21</sup> For the purposes of this chapter I will use the term 'waste picker' as it used in the literature.

*Dump/landfill 'waste pickers'*: individuals or groups that sort through waste (both commercial and organic) on municipal landfills and dumpsites. This category of 'waste pickers' usually lives on or nearby these sites. This type of activity occurs in cities throughout developing countries, including Durban (Chamane, 2009), Johannesburg (Samson, 2012), Manila (Abad, 1991), Kanpur City (Zia, Devadas and Shukla, 2008), Bangalore (Beall, 1997c), Gaborone (Tevera, 1994; Rankokwane and Gwebu, 2006).

*Street 'waste pickers'*: Recyclable material is recovered from the streets, from communal or municipal bins. Some have arrangements with commercial or office buildings and may have access to previously separated material. This activity is also widespread across developing and developed countries, including South Africa (McLean, 2001; Langenhoven and Dyssel, 2007; Samson, 2008, 2012; Schenck and Blaauw, 2011; Viljoen, 2012, 2015), Canada (Atchison, 2012) and India (Hayami et al., 2006).

*Doorstep 'waste pickers'*: this category of 'waste pickers' collects recyclables as part of door-to-door waste collection schemes run by municipalities in partnerships with membership-based organization of 'waste pickers'. Some examples of studies in developing countries include India (Beall, 1997a) and Brazil (Fergutz et al., 2011; Dias, 2011).

*On route/truck 'waste pickers'*: this category comprises of employees who work for formal waste companies that collect waste to supplement their income. For example, Scheinberg et al. (2011) in a study of six cities in developing countries including India, Egypt, Peru, and Zambia found that there was a high prevalence of truck 'waste pickers' where formal crew members 'skim' materials during collection and separated the valuable items for sale.

*Itinerant buyers*: this category of 'waste pickers' engages in door-to-door collection of recyclable materials from households or commercial premises. There are also buyers that are stationary who operate from informal shops and buy waste from others,

including 'waste pickers' (Ahmed and Ali, 2004). This practice is widespread across the developing countries, including Nigeria (Adama, 2012) and India (van Beukering et al., 1999; Zia and Devadas, 2008).

A further categorisation was done by Women in Informal Employment: Globalizing and Organizing (WIEGO), in which 'waste pickers' were categorised according to; a) their involvement in organisations, municipalities and industries; these include unorganised or autonomous 'waste pickers'. b) 'waste pickers' who are organised in cooperatives or associations. Some examples of 'waste picker' cooperatives or associations that have been studied include Brazil (see for e.g. Gutberlet, 2009; Dias and Medina, 2000, 2007), India (Medina, 2000, 2007) and South Africa (Theron and Visser, 2010); c) 'waste pickers' who engage in contractual work who works in scrap yards or in the metallurgic industrial sector, but also in the public sector, or in associations and cooperatives.

Little reliable statistics exists on this population of urban informal workers because they are mobile and their work fluctuates by season (WIEGO, n. d.). Thus far, Brazil is the only country that systematically captures and reports statistical data on 'waste pickers' (Dias, 2011; WIEGO, n. d.). A recent report by the International Labour Organisation (ILO) in collaboration with WIEGO took up the challenge of providing a statistical picture of the urban informal workforce focusing on the following categories of informal work: domestic workers, home-based workers, street vendors and 'waste pickers' (ILO-WIEGO, 2013). According to statistics published in this report 'waste pickers' represent less than 1% of the urban workforce (ILO-WIEGO, 2013: 48), and have been broken down for the following geographic areas:

- Africa: 0.1-0.4% in seven West African cities;
- South Africa: 0.7% (both formal and informal 'waste pickers'); and
- India: 0.1%.



In South Africa, of the 0.7% who participated in the study, only 29% operated completely informally, while 71% operated formally.

#### ***4.2.2 What is their role in solid waste management?***

It has been argued that 'waste pickers' play a very important role in solid waste management, particularly in developing countries (Wilson et al., 2006; Medina, 2007; Samson, 2009). From these arguments there are three key themes in the literature that speak to the role of 'waste pickers' in solid waste management systems. These themes relate to the economic, environmental and social advantages of the work of 'waste pickers' for solid waste management systems.

The first theme relates to the social benefits that are associated with waste picking. Waste picking provides employment and a livelihood for impoverished, marginalised and vulnerable individuals or social groups (Medina, 1997; Wilson et al., 2006). This phenomenon is widespread across developing countries' cities. Some examples of studies that have made this observation in developing countries include: India (Furedy, 1990), Brazil (Medina, 2000, 2007), South Africa (Samson, 2008; Schenck and Blaauw, 2011), and the Philippines (Gonzales, 2003).

The second theme relates to the economic advantages of waste picking for solid waste management systems in developing countries. Collecting, transporting and disposing of municipal solid waste represent a large expenditure for municipalities in developing countries (Medina, 2010). It is common for municipalities in developing countries to spend 20-50% of their total annual budget on municipal solid waste management (Medina, 2010; Dukhan et al., 2012; Le Courtois, 2012). Scholars have argued that 'waste pickers' reduce the cost of formal waste management in the following way; the work of 'waste pickers' reduces the quantity of waste collection, resulting in less money spent on collection and transport (Wilson et al., 2006; Medina, 1997, 2007). 'Waste pickers' also reduce the amount of waste going to landfills, which translate into savings for local governments and extending the life of landfills (Medina, 1997).

The third theme relates to the environmental advantages of the work of 'waste pickers' for solid waste management systems. A recent Informal Economy Monitoring Study (IEMS), conducted by WIEGO, considers 'waste pickers' as environmental agents that play a key role in cleaning and beautifying cities and contributing to public health by preventing the spreading of diseases (WIEGO, n. d.). In terms of cleaning and beautifying the city the operations of 'waste pickers' play an important role in preventing the environmental deterioration of cities by preventing large amounts of waste from accumulating in public spaces such as the streets and parks (Hayami et al., 2006; Dias and Alves, 2008). 'Waste pickers' also contribute to public health in the city by preventing the spread of diseases (Sembiring and Nitivattananon, 2010). In addition to improving the city environment, some scholars have also argued that the operations of 'waste pickers' also play a key role in reducing greenhouse gas emissions (Medina, 2007; Dias, 2012).

Despite the important role that 'waste pickers' play in solid waste management (SWM) systems, local municipal governments have developed a variety of policy responses to deal with 'waste pickers'. Medina (2007) classified these policy responses according to four categories: the first category is referred to as *repression* and relates to the prevalent and dominant view of informal waste activities as a symbol of backwardness, 'waste picker' practices are considered as inhuman, a source of embarrassment and shame for the city and country. This phenomenon is widespread in developing countries. Oguntoyinbo (2012) and a study by Masood and Barlow (2012) in Pakistan are some examples of studies where the repressive nature of municipal policies have been noted. The second category of policy response is referred to as *neglect*, where the work of 'waste pickers' is largely ignored and local municipalities are indifferent towards 'waste pickers'. For example, Afon (2012) in his study on 'waste pickers' in Lagos, Nigeria found that their work at the landfill was largely ignored, making it a haven for 'waste pickers' to carry out their work without any disruptions. The third category of policy responses are referred to as *collusion*. In this instance, government officials develop relationships of

exploitation and clientelism. A few studies cited this phenomenon in their observations regarding public policy towards 'waste pickers' (Nas and Jaffe, 2004; Medina, 2007). Finally, the fourth category is referred to as *stimulation*, where 'waste pickers' are recognised and supported by local municipal governments. A few studies cited examples of local governments that have partly integrated 'waste pickers' into the waste management system (Dias and Alves, 2008; Failor, 2010).

#### 4.2.3 *Theories about how their work is regulated*

Broadly speaking, there are three modes of regulation in informal waste literature that speaks to how informal waste activities are regulated. The first category of literature relates to how formal municipal waste policies and legislation govern where and how informal waste activities are carried out. Local municipalities regulate various aspects of informal waste work, such as access to landfill sites and sources of waste. There are two key processes that impact on informal waste activities on landfills and the streets. The first process refers to modernisation that involves the building of large-scale infrastructure and mechanisation (Dias, 2012). It has both positive and negative effects on informal waste activities. In terms of the positive effects, one study found that modernisation processes create conditions for 'waste pickers' to become highly specialised and find niche markets (Scheinberg, 2011). Furthermore, modernization creates favourable conditions for public-private partnerships, which involve integrating 'waste pickers' into solid waste management systems (Scheinberg et al., 2011). While modernisation of solid waste management creates favourable conditions for 'waste pickers' it also presents threats to their work. Dias (2012) highlighted that modernisation of waste management in the global South has led to the prohibition of access to spaces, such as landfills, where the majority of 'waste pickers' carry out their work. Modernisation processes have also led to 'waste pickers' formalising their activities through public-private partnerships. One study observed that, in the instances where partnerships were established between informal collectors and local municipalities, problems such as

mistrust, poor accountability, lack of opportunities for participation and so forth were cited as problematic consequences of partnerships (Baudouin, 2010).

The second process is referred to as the privatisation of waste management services. This involves the contracting out of solid waste services to private companies. The privatisation of waste management services threatens the sustainability of waste picking activities. For example, Fahmi and Sutton (2006, 2010), in their study of the *Zabaleen* in Cairo, Egypt observed how the involvement of multinational corporations in the provision of waste management services created challenges, such as prohibiting access to waste. In other instances, privatisation of waste management services has led to the criminalisation of informal waste activities. For example, some studies mention how 'waste pickers' are ill-treated, persecuted and harassed by local municipalities where waste management services have been privatised (Samson, 2010; Ezeah et al., 2013).

The second mode of regulation relates to the role of waste networks or value chains and how these regulate when and how materials are sold. As mentioned earlier, 'waste pickers' operate in a value chain that includes various actors, such as middle men, processors and the manufacturing industry (Wilson et al. 2006; Scheinberg, 2011). These recycling value chains play an important role in regulating the commodity-based activities of 'waste pickers', i.e. how materials are sold and when it can be sold. The structure of recycling networks is hierarchical with one or a few central actors that have the power to organise networks. 'Waste pickers' usually operate at the bottom of the hierarchy and are often vulnerable to exploitation from intermediate dealers like middlemen (Wilson et al., 2006). For example, Bruce and Storey (2010) in their study in Bali, Indonesia observed that 'waste pickers' were obliged to sell their material to a particular middleman. Chikarmane et al. (2001) observed similar trends in India. Several other studies make reference to the exploitation and discrimination 'waste pickers' experience from middlemen (Medina, 2001, 2007; 'Waste pickers' without Frontiers, 2008; Samson, 2009).

In addition to the general exploitation and discrimination by middlemen, the position that middlemen occupy in the hierarchy makes them gatekeepers for the recycling industry. For example, Birbeck (1978) in a study of 'waste pickers' at a landfill found that middlemen often performed the role of gatekeepers and regulated how materials are sold. Some studies noted that middlemen occupy the role of gatekeepers because they have the capacity to collect large volumes (Medina, 2000; Ojedo-Benitez et al., 2002; Dias and Alves, 2008). Another example of the middlemen as gatekeepers is the *Zabaleen* in Cairo who were obliged to pay middlemen to gain access to waste (Asaad, 1996; Fahmi and Sutton, 2006a, b).

The relationships between middlemen and 'waste pickers' are not always discriminative or exploitative. For example, Adama (2012) observed that relationships between middlemen and 'waste pickers' were good even to the extent where middlemen took interest in the lives of 'waste pickers'. In a study of street 'waste pickers' Schenck and Blaauw (2011) made similar observations of the relationships between middlemen and 'waste pickers'. In other instances, the relationship between middlemen and 'waste pickers' are characterised as symbiotic and interdependent (Langenhoven and Dyssel, 2007; Schenck and Blaauw, 2011; Adama, 2012).

Middlemen and 'waste pickers' also engaged in patron-client relationships and rent-seeking practices. Some studies observed that middlemen lend money to 'waste pickers', resulting in pickers only selling to one particular buyer (Birbeck, 1978; Nas and Jaffee, 2004; Gutberlet, 2009). These types of relations often emerge around waste infrastructure, like pushcarts. Middlemen also regulate informal waste activities through rent-seeking practices particularly at landfill sites. Furedy (1990) noted that waste and access to waste are not necessarily free to 'waste pickers' on dump sites, as they have to pay in order to gain access to waste. For instance, Rouse (2006) in his study of a landfill in Jam Chakro observed that municipal trucks dumped waste according to a complex system, with individual plots that are rented by 'waste pickers' from a local landlord for a certain amount per month.

The third category of literature relates to the role of various institutions such as 'waste picker' organisations and movements in regulating informal waste activities. These collective forms of organising play a key role in improving the livelihoods and working conditions of 'waste pickers'. 'Waste pickers' around the world have organised collectively in various forms in order to demand recognition for the contribution that they make to the environment and the economy, and to ensure that their role is valued and secured within municipal waste management systems (Samson, 2009).

Collective organisation through cooperatives and social movements is widespread in Latin America. It dates back to early 1990s with Colombian scavengers being the first to organise themselves as a response to the challenge of exploitation by middlemen (Medina, 2000, 2007). Various benefits are associated with collective organisation. For example, Medina (2000) shows how the creation of cooperatives in Latin America and Asia were important for circumventing middlemen, which had implications for the income of informal collectors. In another instance, Medina (2007) makes the same claims about cooperatives and their role in improving the working conditions of informal collectors. There are several other studies that highlight the role of collective initiatives in improving the working conditions of informal collectors (Dias and Alves, 2008; Samson, 2009; Fergutz et al., 2011). Samson (2009) also highlights that working in co-operatives has provided access to support and resources, increased income and advanced women in the sector.

While, collective forms of organisation play a key role in improving the working conditions of 'waste pickers' it also comes with a set of challenges. Collective forms of organisation are often fraught with power dynamics. Samson (2009), in her overview of collective organisation in developing countries, highlighted the following power dynamics that are detrimental to the work of 'waste pickers': the role of external actors in shaping the political orientation, objectives, organisational form and functioning of 'waste pickers'; unequal power relations in cooperatives

where the employer-employee relationship is re-enacted; and the emergence of power relations related to gender, age and other social divisions. In another instance, Gutberlet (2009) highlighted some specific challenges related to collective initiatives in Brazil, such as the lack of transparency in financial administration and erosion of trust in relations between individuals in the collective.

Additionally, there are other types of institutions that regulate informal waste activities such as family, kinship, village ties, gender and caste that are key regulators in informal waste work. These institutions regulate various aspects of informal waste work, such as access to waste, access to landfills or dumpsites, cleaning contracts, and so forth. They also play an important role in developing rules and norms for day-to-day waste activities. Furedy (1984a) observed how families developed systems of rules, where mothers or older siblings supervised the work of younger siblings on a dumpsite in Calcutta. Another study that observed the role of family as a regulator is DiGregario (1994), who observed how loyalty to family, kin, and village regulated and affected relations of exchange, influenced actions and provided access to a variety of resources such as waste. Beall (1997a, c), in her study of 'waste pickers' in India, also found that family networks played a key role in regulating access to resources such as waste and waste contracts.

The role of caste as regulators in informal waste work was particularly evident in studies of waste picking in India. Traditionally waste work or scavenging in India has been assigned to Scheduled Castes, also referred to as 'Untouchables'. Furedy (1984b) in a study of scavenging systems in Calcutta found that scavenging was tolerated in Calcutta because scavenging by scheduled castes removed waste from the streets before the city established its own garbage staff. Furedy also observed the difference in scavenging activities across different castes. Beall (1997a) found that in the context of residential SWM in Faisalabad, Pakistan caste identities were used as an entry and a way to improve one's position. In another instance Beall (1997b) also discusses the role of caste in the case of residents' attitudes towards sorting waste and the power issues that are embedded in caste systems. In another study

Chikarmane et al. (2001) show how caste systems in scrap metal are hierarchical, with particular castes occupying particular positions in the scrap metal industry in Pune and how belonging to a particular caste determines the type of waste work one may do. Studies in other Asian cities also refer to the role of certain outcast groups and the continued association of particular socio-ethnic groups with dirty work that restricts their ability to improve their status, working conditions and livelihoods (Furedy, 1990).

In addition to caste, gender also plays a key role in regulating informal waste activities. Scavenging is generally a male-dominated activity. However, there is also a large amount of women that engage in informal waste activities. DiGregario (1994) in his work in Hanoi, Vietnam found that there is a high degree of gender partitioning, where men would specialise in materials like scrap, while women engage in less specialised activities and collect miscellaneous materials. Chikarmane et al. (2001) found similar trends in the scrap metal economy in Pune, where the incomes of women were less than their male counterparts operating at the same level. Another key issue that studies show is that women operate at the lowest level of the waste hierarchy (Furedy, 1990; DiGregario, 1994). In another instance, Beall (1997c) observed that when sub-contracting of municipal waste collection to private operators in Bangalore, preference was given to male employees. A similar trend was mentioned by Muller and Scheinberg (2003) about women who have limited access to opportunities in comparison to men. Lastly, nationality also plays a key role in regulating informal waste work. Samson (2012b) in a study of reclaiming at a dumpsite in Soweto, South Africa found that reclaimers created and implemented a shift system based on nationality. This played a key role in determining when recyclables could be accessed. What follows is a discussion of the modes of regulation in the informal waste economy in South Africa in order to contextualise informal waste activities in this country.



### 4.3 Modes of regulation in the informal waste economy: The South African Context

#### 4.3.1 *Characteristics of 'waste pickers' in South Africa*

As elsewhere in the developing world, there is a large population of people who pick through waste on landfills and residential wheelie bins on the streets of South Africa. Waste picking on landfills and the streets has a long history in Cape Town (Khan, 1996; Benson and Vanqa-Mgijima, 2010). During the apartheid era in South Africa, landfills were often sited in close proximity to black and coloured townships (Khan, 1996; Engledow, 2007). As a result of poverty and numerous social inequalities, various informal waste activities existed that included uncontrolled burning of waste and salvaging recyclable materials and scraps of food to consume (Engledow, 2007; Ferrara et al., 2008; Benson and Vanqa-Mgijima, 2010).

Waste picking provides a livelihood for many poor people in South Africa. It is a tactic of survival and most of those carrying out this activity are not picking waste because they want to but because poverty forced them into informal economic activities (Viljoen, 2014). The people who engage in this activity are often homeless, poor, unemployed, often immigrants, who struggle to find a job in the formal economy. Because the majority of 'waste pickers' are poor most of them are not able to afford adequate housing and live on the streets, are backyard dwellers, live in informal housing or townships situated far from the city centres (Schenck and Blaauw, 2011; Viljoen, 2014). In terms of their education, a recent study conducted by Viljoen et al. (2015) of 'waste pickers' in the nine provinces in South Africa found that majority of the 914 street 'waste pickers' who participated in the study did not complete formal schooling, with the exception of a few who completed high school. Samson (2008, 2010a) in her study of various landfills across South Africa noted similar trends in terms of the education levels of 'waste pickers'.

'Waste pickers' mainly come from the black and coloured populations in South Africa.<sup>22</sup> Like elsewhere in the developing world waste picking is largely a male-dominated activity in South Africa. A number of studies on waste picking in South Africa cited the high percentage of males that are involved in this activity (McLean, 2000; Benson and Vanqa-Mgijima, 2010; Schenk and Blaauw, 2011). However, gender difference is determined by where informal waste activities are carried out. The aforementioned studies focus on street 'waste pickers'. Studies carried out at landfill sites found that the percentage of males and females carrying out waste activities are equal (Chvatal, 2010; Schenck et al., 2012; Samson, 2008, 2010a, 2012). Viljoen (2014) in a national overview of the socio-economic conditions of street 'waste pickers' cited the following reasons why the number of females are lower on the streets than on the landfills; working conditions on landfills differ from the streets, and the physically strenuous nature of waste picking on the streets because of long distances that have to be covered and heavy loads of waste that have to be carried, as well as the safety aspect.

In comparison with other informal workers such as street traders, domestic workers, and home-based workers, the working conditions of 'waste pickers' are very precarious. Unlike these categories of informal work, 'waste pickers' are often stigmatised, ostracised, disregarded, discriminated against and treated as if they are the waste (Chamane, 2009; Samson, 2008, 2010a, 2012; Schoeman and Sentime, 2011). 'Waste pickers' are also exposed to various health risks (Samson, 2008). For example, Samson (2008) found that those operating on landfills are exposed to possible injuries and death, if trucks that offload waste hit them. 'waste pickers' on the streets face similar challenges because the contents of the bins (such as spoiled food, sanitary towels, dead cats, rats etc.) expose them to health risks (Benson and Vanqa-Mgijima, 2010; Viljoen, 2014).

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<sup>22</sup> The percentage according to race varies depending on the province. For instance in Gauteng the majority of 'waste pickers' are black (Schenk and Blaauw, 2011) whereas in the Western Cape the majority of 'waste pickers' are Coloured (Benson and Vanqa-Mgijima, 2010).

Waste picking is considered a lower tier activity because it requires no capital, start-up costs, and no education or skills (Viljoen, 2014). In a statistical profile of the South African informal economy, Wills (2009) noted that little is known about the number of 'waste pickers' in cities, which has implications for determining the amount of income in comparison to other types of informal work. Although Viljoen (2014) did a fascinating overview of the socio-economic conditions of 'waste pickers' in the nine provinces of South Africa, she was also not able to determine how much 'waste pickers' earn in comparison to other types of informal work in South Africa. This scholar rather discussed 'waste pickers'' income in relation to the recycling industry and settled on the notion that waste picking is a subsistence activity, which translates into the fact that their income is the lowest in the recycling industry (Viljoen, 2014: 99).

#### *4.3.2 The role of 'waste pickers' in the waste management system*

As elsewhere in the developing world, there is a large population of people who pick through waste on landfills and residential wheelie bins on the streets of South Africa. Although there are rough estimations of the number of people earning a living in this way there are no official statistics of 'waste pickers' in South Africa.<sup>23</sup> In South Africa, 'waste pickers' are one of the main suppliers of recyclable materials to recyclers recovered from landfills or household waste (Lowitt, 2008). From this it is clear that 'waste pickers' divert an enormous amount of recyclable materials from landfills in South Africa. Although 'waste pickers' play such an important role in diverting waste from landfill sites they are often treated as if they are waste, are seen as a nuisance, are persecuted and harassed by authorities, exploited by middle men, and their income is very low (Langenhoven and Dyssel, 2007; Samson, 2008, 2012; Chamane, 2009; Benson and Vanqa-Mgijima, 2010; Viljoen, 2014). In order to

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<sup>23</sup>With the exception of statistics from specific industries. For example, in 2011 the Institute of Waste Management of Southern Africa (IWMSA) estimated that there are 88 000 South Africans who earn a living from picking waste on landfill sites. In another instance Collect-a-Can has paid out R20 million to an estimated 100 000 collectors, most of whom have no other source of income (South African Yearbook 2012/2013: 240).

understand the modes of regulation at play it is necessary to understand the policy context in which informal waste collectors operate, as it impacts on how the work of 'waste pickers' are regulated on landfills and the streets.

### 4.3.3 South African Policy Context

On the African continent, South Africa is amongst the few countries that have strengthened and enforced its environmental, health and safety (EHS) laws (Nwagbaraocha, 2011). Like all other environmental regulation and policy in South Africa, section 24 of the Constitution of South Africa (Act 108 of 1996) is the foundation upon which the legislative framework of waste management is built. Waste management in South Africa is governed by the National Environmental Management Act: Waste Act 59 of 2008 (NEMWA or the Waste Act), which came into effect in July 2009. Some of the objectives of the Act include: minimising the consumption of natural resources; avoiding and minimising the generation of waste; reducing, re-using, recycling and recovering waste; treating and safely disposing of waste as a last resort; preventing pollution and ecological degradation (NEMWA, 2009: 18). One of the key characteristics of the NEMWA is that it is committed to adopting a 'waste hierarchy' in its approach to waste management, by promoting cleaner production, waste minimisation, re-use, recycling and waste treatment, with disposal seen as the last resort (Siphuma, 2011). Another key characteristic of the Waste Act is to coordinate fragmented policies prior to 1994 and address the 'end-of-pipe'<sup>24</sup> solutions to waste management (Department of Environmental Affairs and Tourism, 2000). In doing so, the Waste Act gives effect to the National Waste Management Strategy,<sup>25</sup> which further outlines South Africa's approach to waste.

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<sup>24</sup> The end-of-pipe solution refers to finding solutions to a problem at the final stage of its cycle of causes and effects. In the case of waste management, it means focusing on waste disposal rather than waste recycling or waste minimization (Srinivas, 2015).

<sup>25</sup> The National Waste Management Strategy (NWMS) is a legislative requirement of the National Environmental Management: Waste Act 59 of 2008. The purpose of the NWMS is to achieve the objectives of the Waste Act (Department of Environmental Affairs, 2012).

<b>Waste Hierarchy</b>		
<b>Cleaner Production</b>	<b>Prevention</b>	
	<b>Minimisation</b>	
<b>Recycling</b>	<b>Re-Use</b>	
	<b>Recovery</b>	
	<b>Composting</b>	
<b>Treatment</b>	<b>Physical</b>	
	<b>Chemical</b>	
	<b>Destruction</b>	
<b>Disposal</b>	<b>Landfill</b>	

**Figure 3: Waste hierarchy<sup>26</sup>**

It is the responsibility of local municipalities to put the waste hierarchy into effect. This is outlined in Schedule 5B of the Constitution of South Africa, which specifies that 'refuse removal, refuse dumps and solid waste disposal is a local government function. This statutory obligation of local government is framed by section 78(3) of the Local Government Municipal Systems Act (Act No. 32 of 2000). Municipalities are responsible for ensuring that basic waste collection services are provided in a way that is not harmful to human and environmental health. The function is carried out in collaboration with private waste management companies. Municipalities are also required to incorporate an Integrated Waste Management

<sup>26</sup> National Waste Management Strategy (2005:11)

Plan (IWMP) into their Integrated Development Plan (IDP)<sup>27</sup> to ensure that waste management is a priority on the local government agenda (City of Cape Town, 2006, 2013; Engledow, 2007; Gilbert and Fumba, 2011). Although the responsibilities of municipalities are clearly defined they face many challenges in implementing the waste hierarchy. Some of the main challenges related to implementing the waste hierarchy include the definition of waste and its legal interpretation by both government and industry (Oelofse and Godfrey, 2008), the inability of municipalities to cope with mandates, and lack of coordination between local and district municipalities (Siphuma, 2011).

#### *4.3.4 How are they regulated?*

With this in mind, informal waste activities in South Africa operate alongside a modern waste management system that is modelled upon international standards. This has particular implications for informal waste activities in South Africa. In order to understand the nature of these implications for informal waste work it is necessary to discuss to what extent waste management policy and legislation integrates informal waste work. Currently waste management policy does not make direct reference to integrating 'waste pickers' but it does however, recognise the importance of job creation in achieving the objectives of promoting and expanding recycling initiatives (National Waste Management Strategy, 2005). One of the ways in which 'waste pickers' have been integrated into waste management in South Africa is through the involvement of community cooperatives in waste minimisation (Theron and Visser, 2010). This requires 'waste pickers' to formalise their activities by organising themselves into cooperatives in order to improve their livelihoods and working conditions (Theron, 2010). There are a few examples of 'waste pickers' who have organised themselves into cooperatives in order to gain access to opportunities

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<sup>27</sup> The National Environmental Management: Waste Act (NEMWA) (No. 59 of 2008) acknowledges the constitutional right of everyone to a healthy environment and to preserve the environment for future generations. The Act calls for, among other things, waste to be managed in an environmentally friendly manner and waste minimisation to become a priority activity in creating jobs and saving space. NEMWA also dictates that all handlers of waste should have a plan. As such, the City has both an approved Integrated Waste Management Policy and an Integrated Waste Management Plan (IWMP).

(see for e.g. Theron and Visser, 2010; Linnay, 2013). In these instances, cooperatives secured tenders to operate at the drop-off facilities or material recovery facilities at landfill sites.

If one of the key ways to integrate 'waste pickers' into the waste management system is through formalising their activities how do waste management policies affect those who are not formalised? For those operating mainly on landfills, waste management policies affect their work because there is currently no uniform approach to waste picking activities at landfills. Policies range from supporting 'waste picker' activities, tolerating their activities and in other instances outright banning their activity at landfills (Samson, 2008; CSIR, 2011; Komane, 2013). The Minimum Requirements for Disposal of Waste by Landfill, published in 1998<sup>28</sup>, serve as a guideline for the formalisation and control of waste picking activities at landfills (Komane, 2013). Section 10.4.4 of this document discourages waste picking at landfills, but makes provision for the following:

'Should the Permit Holder wish to allow controlled reclamation at a general waste disposal site, however, permission can be obtained as part of the Permit Application or as an amendment to an existing Permit. In this case, guidelines and Minimum Requirements are provided, in order to ensure safe and controlled working conditions. Notwithstanding, it is noted that responsibility for the safety of any reclaimers on the site vests with the Permit Holder, who will be required to enter into an indemnity agreement with the Department...' (Minimum Requirements for Disposal of Waste by Landfill, 1998:10).

In the instance where these activities are allowed at landfill sites, it is required that the activities are formalised. This would include

'...regular consultation with and registration of reclaimers and the provision of appropriate safety measures. Safety measures would include the separation of

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<sup>28</sup> The Minimum Requirements for Disposal of Waste by Landfill was issued by the Department of Water Affairs and Forestry.

reclamation from compaction and covering activities, and the provision of safety clothing' (Minimum Requirements for Disposal of Waste by Landfill, 1998: 10).

These provisions have important implications for how waste picking activities are playing out at landfill sites. In a study of various landfills across South Africa Samson (2008, 2010a) found that landfill site managers play an important role in regulating the access of 'waste pickers' to landfills. In some instance site managers tend to ban activities on the landfill because they have a strong disincentive to disallow waste picking at landfill sites (Benjamin, 2007 in Samson, 2008). In other instances, site manager do not actively discourage the activity and allow waste picking at landfills (Samson, 2008).

While 'waste pickers' who operate at landfill sites are regulated by specific policies, the opposite is apparent for those operating on the streets. Informal waste activities on the streets are regulated by state and non-state forms of regulation in the following way; state forms of regulation include by-laws and waste management policies that is in line with national waste management legislation and policies. The by-laws and policies set the standards for how waste ought to be handled, transported and stored. Currently, very little is known about how these waste by-laws and policies affect those operating on the streets in South Africa. However, the studies that focus on street waste collectors make reference to non-state forms of regulation that enable or constrain informal waste activities on the streets. For instance, some studies mentions that the work of 'waste pickers' who operate in residential areas are often disrupted by local residents because rummaging through wheelie bins are seen as a nuisance or a threat to safety and security of neighbourhoods. This is a widespread believe that is apparent from studies conducted in Cape Town (Langenhoven and Dyssel, 2007) and Johannesburg (Schoeman and Sentime, 2011). Second, the work of 'waste pickers' on the streets is regulated by private contractors or private recycling companies who act as service providers to local municipal governments. In this instance, these actors often compete with 'waste pickers' for recyclable materials (Schoeman and Sentime, 2011),



prohibit access to recyclable materials by criminalising the activities of 'waste pickers' (Engledow 2005; Tischler 2011; Gilbert and Fumba 2011), and regulate access to neighbourhoods (Samson, 2008). Third, the work of 'waste pickers' is constrained by local police authorities or private security companies. In this regard, 'waste pickers' are often harassed by Metro Police (Schoeman and Sentime, 2011) and are often harassed by police because they are often accused of stealing (Benson and Vanqa-Mgijima, 2010; Viljoen, 2014).

#### **4.4 Modes of Regulation in the Informal Waste Economy: The Cape Town Case**

The previous section shows the modes of regulation at play in the informal waste economy on a national scale. This section focuses specifically on Cape Town discussing the various modes of regulation that organise informal waste activities in this city. What is unique about Cape Town is that, unlike other cities in South Africa, it has an innovative and effective waste management system. The City of Cape Town's (CoCT) solid waste management practices are one of best in the country and they are considered leaders in the region. This is evident in its waste policies and its world class waste infrastructure. Unlike elsewhere in the country, 'waste pickers' are prohibited from working on landfill sites in Cape Town, which means that 'waste pickers' operate mainly on the streets. This involves sourcing waste directly from wheelie bins on waste collection days. Another interesting aspect of 'waste pickers' in Cape Town is that most of them don't live in the areas where collection activities are carried out. This results in an influx of people on waste collection days in affluent neighbourhoods, which have important implications for how their work is regulated.

With this in mind, this section will start off with an overview of the different types of informal waste activities that occur in the city. Following this discussion, I provide a brief overview of waste management policy in the city and the implications this has for informal waste activities. Finally I will move onto a discussion of the various modes of regulation at play in the informal waste economy.

#### 4.4.1 *Characteristics of Informal Waste Collectors in Cape Town*

As discussed earlier, 'waste pickers' in South Africa have very specific socio-economic conditions. Most of them are poor, unemployed males who are mainly from the Black and Coloured population. The studies cited in the earlier discussion of the characteristics of 'waste pickers' in South Africa focus on a specific category of 'waste pickers' (Benson and Vanqa-Mgijima, 2010; Schenck and Blaauw, 2011; Viljoen, 2014). While these studies provide a useful resource for understanding the nature of informal waste activities on the streets it is limited because of its focus on subsistent waste activities. In doing so, it excludes other categories of informal waste collectors. Empirical findings in this study suggest that informal waste activities on the streets are varied, with individuals operating at different levels, engaging in commodity-based, service-based and value-based activities. For the purposes of this study, informal waste collection is divided into three categories. Each category is a representation of those who work in the sector, where they work and how their work is organised. The purpose of these categorisations is not to place informal collectors in neat analytical 'boxes' but to indicate how dynamic and varied the activity is.

As mentioned in Chapter One, various terms are given to individuals who engage in informal waste activities. Empirical studies in South Africa typically refer to informal waste collectors working on the streets and dump sites as reclaimers or street 'waste pickers' (Samson, 2009, 2012; Schenck and Blaauw, 2011). In this study I identified three categories of informal collectors operating at various levels; '*skarelaars*', '*carties*', and '*bakkie brigade operators*'.

##### *'Skarelaar'*

'*Skarelaars*' are unemployed or homeless individuals who collect waste with the help of a trolley or a bag. Their work is organised according to where collection is carried out and can be divided into two categories. The first category of *skarelaars* work in affluent neighbourhoods close to or in the central business district (CBD), while the second category collects waste on the Cape Flats. The work of *skarelaars*

who collect waste in areas close to or in the CBD is strategically organised around waste collection days, specific times, place and prices of the nearest buy-back centres, and relationships with local residents, local business owners (see Fig. 4). Their work entails rummaging through wheelie bins and carefully separating recyclable materials from domestic (household) waste, while simultaneously sorting materials into different categories. The material that is collected varies and depends on the value of recyclable materials – their income determined by the buy-back centre and how much the *skarelaar* can transport. *Skarelaars* earn anything between R25 to R100 per day. This amount is based on commodity-based activities where materials such as glass, paper, plastic and so forth are traded for a price.



**Figure 4: Skarelaar working in affluent neighborhood<sup>29</sup>**

The second category includes *skarelaars* who collect waste on the Cape Flats. Their work is strategically organised according to specific places, such as *shebeens* and *spaza* shop, specific times, and storage space (see Fig. 5). Collecting waste on the Cape Flats involves going to the nearest *shebeen* or *spaza* shops for material and collecting materials from open spaces or fields. Unlike *skarelaars* who work in areas

<sup>29</sup> All photographs were taken during fieldwork

close to or in the CBD, and who collect various types of materials, most of those working on the Cape Flats specialise in one material. The preferred materials include glass, paper, and plastic or non-ferrous scrap metal. The reasons for these specialisations include problems of space and concerns about health and hygiene. Glass and scrap metal is more lucrative, can be stored easily and do not attract rodents. Materials are not sold immediately by those working in affluent areas, but bulked and stored in their homes or backyards. Most *skarelaars* working on the Cape Flats often sell to a middle man – a *bakkie* brigade operator or the nearest buy-back centre. Their income varies between R30 – R150 depending on whether they sell daily or monthly. Like the *skarelaars* who operate elsewhere in the city, income for those operating on the cape flats is also based on commodity-based activities – selling materials like glass for a price. Although a large portion of their income is determined by the materials that are sold, some *skarelaars* also engage in value-based activities, such as making bags, bed lamps, and other items from recycled materials and selling these for a small amount.



**Figure 5: Skarelaar collecting waste on the Cape Flats<sup>30</sup>**

<sup>30</sup> Source: Solid Waste Network (2008)

### ‘Carties’

‘Carties’ is the English term for informal collectors who operate with horses, as ascribed to themselves by themselves. The term ‘cartie’ derives from the noun cart, the mode of transport that they use to carry out their daily activities. Carties themselves also refer to the activity of looking and collecting scrap metal as ‘skarrel’. Fig. 6 is an example of a cartie. .



**Figure 6: Cartie on his cart just before he goes to the scrap yard<sup>31</sup>**

The carting industry has a long history in Cape Town and its heritage dates back to District Six. Horse-drawn carts were used as a means of generating income through the ‘smous’ [Afrikaans word for hawking] of fish, vegetables and collecting bottles and bones.<sup>32</sup> Today they are largely used for scrap metal collection, with some individuals using them for the hawking of fruit and vegetables, removal of garden waste. In some instances carties own only a horse and have to rent carts for a small fee a day. The carting industry has a rich tradition and a number of the individuals engaging in this activity have inherited the practice and their horses from previous generations. Carthorses are an important source of income generation for many families across the Cape Flats.

<sup>31</sup>All photographs were taken during fieldwork

<sup>32</sup> Carthorse Protection Association. About us. Available: <http://carthorse.org.za/about/> [2012, October 22].



The carting industry is male dominated and include young and old males, varying from 16 to 70 year old. Carties live across the Cape Flats in areas such as Bonteheuwel, Uitsig, Netreg, Kalksteenfontein, Mitchell's Plain and so forth. The majority of the carties own horses or donkeys, with a small number that hire carts and horses at the rate of R150 per day. All carties are registered and regulated by Carthorse Protection Association (CHPA) (see Box 4.1 for a detailed description of this organisation).

The work of carties is organised according to different areas, times of the day, and framed by relationships with local residents and neighbourhoods where horses are permitted to operate. Unlike *skarelaars*, who source their material by rummaging through bins or collecting at *shebeens* and *spaza* shops, carties have a different collection procedure. This involves travelling to different areas, from residential to industrial, and going from door to door calling out for scrap metal. Scrap metal is sourced from areas such as Maitland, Mowbray, Woodstock, Salt River, Belgravia Road, Athlone, Epping and so forth. Carties specialise in the collection of non-ferrous metals such as aluminium, tin and copper. However a number of them only collect aluminium and tin, as copper is contested material because of the high incidences of theft in the city. In most instances carties get the metal for free, however there are also carties who buy scrap metal from local residents in areas such as Gugulethu, Langa, and Khayelitsha.

Carties work six to seven days a week earning an income ranging from R300 to R2000 or more per month. This amount is largely based on commodity-based activities in which carties trade scrap metal for a price. A small portion of their income comes from service-based activities, which involve the removal of garden waste or cleaning services. The income is also determined by the availability of scrap metal, the weather and the amount of garden waste removal jobs. Weekdays are allocated to scrap metal and weekends are for the removal of garden waste or cleaning services. Most carties prefer to work six days a week as they want their

animals to rest. Those who work seven days a week usually have more than one working horse, which they alternate so that horses get at least one day of rest.

#### **Box 4.1: Regulating the Carthorse Industry**

##### **Regulating the carthorse industry**

The Carthorse Protection Association is a non-profit animal welfare organisation situated in Epping, Cape Town. Their mission is to protect working carthorses and donkeys from abuse, and contribute to the social upliftment of the Cape Flats carting industry.

CHPA provides clinic, patrol, a call-out response, veterinary and rehabilitation services to all working cart horses and donkeys living on the Cape flats. In addition, it also provides support, education and training to cart horse owners and drivers who use working cart horses as a means of income generation.

CHPA plays an important role in regulating the cart horse industry. It works closely with the Animal Control Unit that falls under the law enforcement department of the City of Cape Town and the Animal Welfare Group.

All carties are registered with CHPA and involves the placement of a bright yellow identification plate on the cart showing the cart horse's registration number and name. The main reason for this is to make carthorses more identifiable on the road in order to achieve the following: reduce abuse of the roads, regulate the carting industry, make it easier for the members of the public to report abuse and for law enforcement officers to enforce the provisions of the Animal bylaw (CHPA, 2010, September 22).<sup>33</sup> Figure 7 showcase examples of ID plates.

<sup>33</sup> Carthorse Protection Association. 2010. CHPA is making history! Available: <http://carthorse.org.za/2010/09/chpa-making-history/> [2014, July 8].



**Figure 7: Yellow ID plates**

The E53 process that was launched in 2012 has similar principles to the K53 motor vehicle driving test process. This involves carties undergoing training sessions learning about signs, signalling and safety, the 'lot check' – this is checking on horse, cart and harness, speed and load and the 10 carthorse commandments. Upon successful completion of training workshops, carties are issued with a carthorse operator's permit (CHPA, 2012, July 16).<sup>34</sup> Figure 8 is an example of a permit.



**Figure 8: Carthorse operator permit**

### *'Bakkie Brigade' Operator*

The term '*bakkie brigade*' operator refers to independent individuals with motorised transport who collect waste from industrial and commercial outlets. They are also colloquially referred to as the 'small guys' or rogue small-time operators

<sup>34</sup> Carthorse Protection Association. 2012. Another milestone – issuing of the E53. Available: <http://carthorse.org.za/2012/07/another-milestone-issuing-of-the-e53/> [2014, July 8].



(Benjamin, 2013). The form of transport that is used for this small-scale collection is a *bakkie* or pick-up truck, generally not able to transport more than 2 tonnes of load.<sup>35</sup>

The work of *bakkie* brigade operators is largely service-based. It involves entering into service-based agreements with various clients for the removal of recyclable materials. Because their activities are service-based the nature of agreements with clients has a formal character where operators sign or enter into verbal agreements with clients. These agreements often involve clients who pay a small fee for the collection of recyclable materials or operators who weigh recyclables on site and pay clients per kilogram for the amount of waste collected. In other instances, operators get free access to recyclable materials and no costs are involved for collection of recyclable materials. Operators are allowed to place wheelie bins on commercial or industrial premises in order to store the waste. There are also instances where the clients provide the bins for the storage of waste. Recyclable materials are usually pre-sorted and, upon collection, materials are taken elsewhere for further sorting and separating. Figure 9 is an example of a *bakkie* brigade operator:

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<sup>35</sup> Afrikaans expression for a pick-up truck or light delivery vehicle.



**Figure 9: Bakkie Brigade Operator in Belhar, Cape Town<sup>36</sup>**

Their work is organised by when they are contacted by their clients to collect the recyclable materials, volumes of recyclable materials, and the type of material they collect. This involves operators collecting materials once a week or biweekly. Depending on the volume of the recyclable materials it is stored in shipping containers or the backyards of operators.

Unlike *skarelaars* and carties whose activities are mainly subsistent, *bakkie* brigade operators consider themselves as '*besigheidsmanne*'<sup>37</sup> or entrepreneurs. Some of them work six days a week, collecting from their clients, while others who have buy-back centres work seven days a week. Their income is significantly more than that of *skarelaars* and carties because of the nature of their activities: they are able to store in bulk and transport large amounts of materials. Thus they may earn upwards of R2000 per month.

In addition to collecting materials from commercial or industrial premises, some operators also run buy-back centres from their backyards. This involves

<sup>36</sup> Source: Solid Waste Network (2005)

<sup>37</sup> Afrikaans word for a business man.

‘buying in’ – as opposed to collecting it themselves - waste for a small fee. Waste is usually supplied by *skarelaars*, carties and communities. Once enough waste is collected, operators transport waste to the nearest scrap yard and sell the materials to big companies. Like *skarelaars* and carties, the income of *bakkie* brigade operators is largely commodity-based. In comparison to the other two categories of collectors, *bakkie* brigade operators have a higher income because they are able to store in bulk and transport large amounts of materials.

#### 4.4.2 Overview of Cape Town Waste Management Landscape

##### 4.4.2.1 City of Cape Town Waste Management Policies

The CoCT has made a conscious effort to strive towards the goals of the 2001 Polokwane Declaration.<sup>38</sup> The CoCT subscribes to the waste management hierarchy (see Fig. 3 for an example) of the National Waste Management Strategy (NWMS) as a method of minimising the amount of waste that will be landfilled, thus contributing to the implementation of the national and provincial strategies to minimise waste at the local level (City of Cape Town, 2006).

The CoCT has greatly developed its policy over the past decade. In 2006, the CoCT adopted its Integrated Waste Management Policy (IWMP). The IWMP contains principles and information about the management of waste, service standards and levels, and services provided by the Council.<sup>39</sup> In 2009, the CoCT became one of the first local municipalities to implement an Integrated Waste Management By-Law (IWMB) in line with national legislation. This by-law’s aim is to regulate and control the management of waste in the city. The by-law also sets out the rights and obligations of the residents and businesses in the Cape Town area and

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<sup>38</sup> In 2001, the Department of Environmental Affairs and Tourism issued the Polokwane Declaration. The Polokwane Declaration is a formal declaration with the goal to reduce waste generation and disposal by 50% and 25% respectively by 2012 and develop a plan for ZERO WASTE by 2022 (Hallowes and Munnik, 2008)..

<sup>39</sup> Available:

[https://www.capetown.gov.za/en/IDP/Documents/Statutory%20compliance%20plans/1%20Waste%20Plan%20OSWM%2017\\_01\\_08%20\(final\).pdf](https://www.capetown.gov.za/en/IDP/Documents/Statutory%20compliance%20plans/1%20Waste%20Plan%20OSWM%2017_01_08%20(final).pdf) [2014, April 23].

the rights and duties of the Council in the management and disposal of waste.<sup>40</sup> The by-law is commended because it has consolidated decades of fragmented regulations and local rules in the city in order to provide better waste management (City of Cape Town, 2011b).

Although the IWMB is largely aimed at formal waste management practices and services one segment of the informal waste economy, *bakkie* brigade operators are affected by this by-law in the following way; because *bakkie* brigade operators engage in service-based activities and transport waste in the city they are required by the by-law to register as accredited services providers. According to section 1 of the IWMB an accredited service provider:

...means a person or entity accredited by the City in accordance with its guidelines published from time to time and who provides a waste management service in the City and may include, but is not limited to, large and small business, entrepreneurs, community cooperatives, and venture learnerships.

Becoming an accredited service provider has implications for the work of *bakkie* brigade operators because it determines whether operators will be able to gain access to collection opportunities at commercial properties.

In addition to regulating how operators can access opportunities, the IWMB also regulates how waste ought to be stored and transported. Section 12 of the bylaw outlines how *bakkie* brigade operators ought to handle and store their waste. By outlining key requirements for how waste ought to be stored, the IWMB regulates how waste as a material acts. In doing so, it prevents that waste cause disorder and cause hygienic issues. It also regulates how *bakkie* brigade operators interact with waste by prescribing various ways of storing and containing waste.

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<sup>40</sup> Available: [https://www.petcodb.co.za/ag3nt/media/media\\_items/2012//1326894101.pdf](https://www.petcodb.co.za/ag3nt/media/media_items/2012//1326894101.pdf) [2014, March 26].

#### 4.4.2.2 *Waste management infrastructure*

The City of Cape Town infrastructural capacity to manage waste is considered to be better than most developing countries in Africa (Engledow, 2007). Since the restructuring of local government in Cape Town the solid waste management department has worked towards putting in place the appropriate infrastructure to encourage waste minimisation in the city. Although the primary method of waste disposal in the city is landfilling, additional infrastructure, such as drop off and material recovery facilities are put into place to divert waste from landfills. This section provides a brief overview of the physical infrastructure in place to manage and minimise waste in the city.

##### a) Landfill sites in Cape Town

Landfills are Cape Town's primary method of waste disposal. Of the former six landfill sites the city now has three municipal landfill sites in operation, namely Coastal Park, Visserhok and Bellville South.<sup>41</sup> Coastal Park is the largest waste disposal site in the city and is situated on Baden Powell Drive, west of Muizenberg (Megatech, 2004; City of Cape Town, 2013). It occupies approximately 75 hectares and has a waste composition of about 800 – 900 kg/m<sup>3</sup>. Coastal Park receives general municipal waste, garden waste and builders rubble, which is compacted on site (Megatech, 2004; City of Cape Town, 2013). This site will be operational until 2016-2022.<sup>42</sup>

##### b) Composting facilities

Initially the City of Cape Town had three composting facilities namely Swartklip, Radnor and Bellville South, which were established in the 1960's (Megatech, 2004; Engledow, 2007; Nkala, 2011). Since then Radnor and Swartklip compost plants were closed, leaving Bellville South as the only city-owned compost plant in operation (Nkala 2011). This compost plant treats municipal solid waste and converts organic

<sup>41</sup> Available: <http://www.capetown.gov.za/en/Solidwaste2/Wastedisposal/Pages/Landfillsites.aspx> [2013, October 29].

<sup>42</sup> Ibid.

waste into compost (Megatech Report, 2004; Engledow, 2007; Akhila Consortium, 2011). One of the main reasons for closing Radnor and Swartklip was that they were unsustainable with low quality and sales of compost due to high levels of contamination (Engledow, 2007; Akhila Consortium, 2011). In 2011, the CoCT approved a public-private partnership (PPP) in order to establish partnerships with the private sector to operate waste processing activities and increase plant performance (Akhila Consortium, 2011; Nkala, 2011).

#### c) Material recovery facilities (MRFs)

In addition to landfills, the CCT has material recovery facilities (MRF). Material recovery facilities were established because of its ability to divert general waste from landfill disposal (Engledow, 2007). MRFs are controlled by the Disposals Unit in the SWM department, but the management of the facilities are contracted out (Visser and Theron, 2010). The infrastructure and equipment at MRFs are owned by the City, but private contractors manage the salvaging of recyclable materials (Visser and Theron, 2010).

MRFs receive waste from both municipal and private collection companies. The waste is offloaded onto an apron area and then pushed by a front-end loader onto a conveyor belt, which then feeds the waste into containers where it is compacted (Engledow, 2007). MRFs have two key functions. First they serve as a transfer station for waste from internal and external service providers to deal with issues of distance.<sup>43</sup> Secondly, they allow for separation of waste (Engledow, 2007). There are two types of MRF's in the city, namely 'dirty' MRFs and 'clean' MRFs. The CoCT has three MRF's; Athlone Refuse Transfer Station (ARTS), Swartklip Refuse Transfer Station and Kraaifontein Integrated Waste Management Facility (KIWMF). All three MRFs are transfer stations as well.

#### d) Drop-off facilities

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<sup>43</sup> Available: <http://www.capetown.gov.za/en/Solidwaste2/Wastedisposal/Pages/Transferstations.aspx> [2013, October 29].

In addition to the landfill sites and MRFs, the CoCT has a network of drop-off sites across the city. Drop-off sites are facilities provided by the council in strategic locations around the city of Cape Town to facilitate waste minimisation or serve as a temporary transition point for waste (City of Cape Town, 2006). They also serve as an alternative to kerbside recyclable collection, which is considered as unaffordable and unsustainable for local municipalities (Coetzee, 2011). Up to 1.5 tons of recyclables or garden refuse can be dropped off at these sites free of charge.<sup>44</sup> There are currently 25 drop-off facilities in the city. Included in this number are 20 that are considered as stand-alone drop off sites, which are managed by the collection divisions in the SWM department. The remaining five, i.e. two drop off sites are at the transfer stations (i.e. ARTS and KIWMF) and the other three are located at the three landfill sites in the city and is managed by its disposal division.<sup>45</sup>

Drop-off sites are located within a 7 km radius for use by residents, however not all Cape Town residents have access to these sites (Gilbert and Fumba, 2011). Since the initial roll-out of drop-offs in 2004<sup>46</sup> the waste streams at these sites have broadened to include the following waste: garage waste, clean garden waste, motor oil, cans and metal, paper, cardboard, glass bottles, plastic, e-waste, clean builder's rubble, polystyrene (City of Cape Town, 2011).

From this section it can be seen that the CoCT has a wide range of waste management infrastructure in order to manage waste effectively. It is also clear that there is a move towards large-scale technologised infrastructure. This approach organises the informal waste economy in the following way. First it forces informal collectors to source recyclable materials from wheelie bins or find other means, such as collection agreements with clients. Secondly, the infrastructure, coupled with a new public management approach, marginalises informal collectors, while creating conditions for private companies to flourish. Finally, this particular coupling of

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<sup>44</sup> Ibid.

<sup>45</sup> Personal Communication (2013, November 18).

<sup>46</sup> Drop-off facilities were initiated in 2004 and eight drop-offs were initiated to minimize the amount of green waste going to landfill sites and to encourage the composting of green waste (Engledow, 2007).

infrastructure and public-private partnerships organises informal waste activities in a way that often criminalize their activities and make it seem socially undesirable because of the activity of rummaging through wheelie bins. This in essence affects the way that informal waste activities it is viewed by the public and shapes the social identities of those engaging in the activity. The next section discusses the CoCT strategies of waste minimization and how it has enabled and constrained informal waste activities in a very particular way.

#### **4.4.2.3     *Waste Minimisation in Cape Town***

‘Think Twice’ was a waste minimisation project implemented by the City to establish innovative ways of promoting waste minimisation in the city. This project was initially rolled out in 2002 in Marina Da Gama and then again in 2006 as part of a larger project that came into effect as a waste minimisation project to establish innovative ways of promoting waste minimisation throughout the city. ‘Think Twice’ was implemented by the collection section in the solid waste department, which is responsible for the collection of waste in the city (Gilbert and Fumba, 2011). Due to budget constraints, ‘Think Twice’ was rolled out in phases in approximately 69,957 service points, which constitute 8.67% of the city’s service points, being formal households (Gilbert and Fumba, 2011; Nkala, 2012). The initiative was rolled out in the following areas: 1) Helderberg area: Gordons Bay, Somerset West, Strand, part of Macassar and surrounds; 2) Deep South/South Peninsula: Fish Hoek, Simonstown, Kommetjie, Ocean View, Noordhoek, Scarborough; 3) Atlantic Suburbs: Pinelands, Parklands, Melkbosstrand, Bloubergstrand; 4) Houtbay: Camps Bay, Clifton, Bantry Bay, Bakoven. Sectional titles and business areas such as Seapoint, Green Point, Mouille Point and Three Anchor Bay were included in the initiative in 2008 (Nkala, 2012).

There are currently six Think Twice pilot programmes in the city that consist of a three-year separation at source contract. This involves private contractors collecting clear bags at households, sorting the recyclables at their own material recovery facilities and selling the recyclables into the market. This service was outsourced for



reasons, including that the City's collection division did not have sufficient funds, does not have adequate equipment for waste minimisation, nor does it have the expertise to find buyers for recyclables and negotiate with them (Visser and Theron, 2009; Nkala, 2012). The two main initiatives under the umbrella of this project are a) waste separation at source and b) waste recovery and sorting at drop off facilities.

a) Waste separation at source/Split bag collection

The waste separation at source or split bag collection involves the separation of dry and clean recyclables (paper, cardboard, plastics, glass, cans and other packaging waste) from wet waste at household level. The first waste separation at source pilot was rolled out in Marina Da Gama, a residential suburb situated in the South Peninsula Administration in the City of Cape Town. The pilot project was launched in August 2002 and included all 1042 households in the area with the distribution of a yellow bag starter pack. The starter pack contained information about the initiative and yellow bags to encourage the separation of dry from wet recyclables (Engledow, 2005). Despite the optimistic start of this pilot project it had a number of challenges. Firstly, private contractors were not subsidised by the City to collect and sort the recyclable materials (Visser and Theron, 2009). Secondly, the pilot project did not take into account the existing activities of informal waste collectors in the area, because it mainly focused on the residents (Engledow, 2005). Box 4.2 provides a brief account of this:

**'Messing up the whole system': Skarelaars and 'Separation at source' initiatives in the city** (compiled from Engledow 2005; Tischler 2011; Gilbert and Fumba 2011)

Separation at source initiatives were aimed at getting households involved in waste minimisation. Because of its particular focus it did not take into account the existing activities of informal waste collectors in these areas. As a result of this, private contractors experienced problems as informal waste collectors rummaged through bins and took recyclables before the contractors were able to collect the materials.

Residents complained as they were of the opinion that informal collectors was 'messing up the whole system'. Initially, the private contractor enforced regulation through disclaimers on their bags, indicating that the bag and its contents were the property of the private contractor. However, this did not work well because it did not deter *skarelaars* from taking the recyclables.

Eventually the private contractors established a partnership with the *skarelaars* in the area. The partnership involved *skarelaars* collecting recyclables from the wheelie bins without scavenging and breaking bags. The full bags were then purchased from them by the contractor for a fee. The *skarelaars* took the bags to a designated area where the private contractor weighed each full bag. Initially *skarelaars* were paid in cash immediately for the bag of recyclable materials. Later, the private contractor in consultation with the *skarelaars* introduced a coupon system in which they could collect the cash at a later point.

*Skarelaars* were issued with branded vests, bags and were allowed to keep their trolleys as this was their means of transporting goods. The partnership with the private contractors gave those *skarelaars* who participated in this initiative legitimacy as residents became less inclined to consider them as thieves and hazards and allowed them to access their wheelie bins.

However, despite generous efforts with the *skarelaars* the private contractor experienced a number of problems. The private contractors struggled to manage the *skarelaars* as some stole the clear bags (which were designated for collection by private contractor).

In 2007, the City attempted to start a second 'separation at source' pilot project. This pilot was launched and included affluent and poorer households. It was rolled out across different areas in the City, servicing 25% of the residents (Visser and Theron, 2009; Tischler, 2011; Nkala, 2012). It operated along the same principles as the first pilot project in Marina da Gama and private contractors were subsidised to collect and sort materials (Visser and Theron, 2009). Similar to the first initiative, the

second pilot roll-out did not take into the account the existing informal activities affluent areas (Gilbert and Fumba, 2011). Separation at source worked well in affluent areas but did not work in poorer areas, as contractors did not adequately market and communicate with residents. Equipment, such as shipping containers were stolen (Schulschenk, 2009; Nkala, 2012). In other instances, residents particularly in areas such as Delft, Mfuleni and Ocean view demanded incentives in exchange for waste (Tischler, 2011; Nkala, 2012).

#### b) Waste recovery and sorting at drop off facilities

As mentioned before the City has a total of 25 drop off facilities in the city. These drop-off facilities are also used to encourage waste minimisation activities. Unlike the separation at source project that was mainly aimed at encouraging waste minimisation at household level, drop-off facilities receive a wider range of waste. Members of the public are encouraged to drop off recyclable materials at these sites (Gilbert and Fumba, 2011).

Waste recovery and sorting at drop-off facilities are done by small and medium enterprises (SMME) who bid through a tender process for the contract to sort and recover waste at these facilities. Contracts to operate at these facilities are awarded in one of two ways: for contractors who offer services of chipping and haulage at drop-off sites contracts are awarded through a tender process. On the other hand, recycling contracts are awarded by means of a request for interest (RFIs), which are advertised in public newspapers. Contractors are selected based on their area of operation and functionality, their ability to manage the sites and to what extent it will benefit local community groups (Personal Communication, 2013, November 18). Like private contractors in 'separation at source' pilot projects those operating at drop-offs are subsidised in that the department pays them a set fee for each skip of composting waste they sell (Visser and Theron, 2009; Theron and Visser, 2010).

Informal waste collectors or community organisations are encouraged to bid through RFIs for recycling contracts at drop-off sites. However, they have to

organise themselves and formalise their activities. Opportunities to recycle at drop-offs are largely aimed at entrepreneurs. A City official made the following comment: 'the focus is on entrepreneurs, rather than the co-operative model, although co-operative who operates as entrepreneurs are also included...' (Personal Communication, 2013, November 18). This quote suggests that, in addition to organising and formalising activities, informal collectors are required to be entrepreneurial.

#### **4.5 Regulating informal waste activities in Cape Town**

From the previous two sections, it is clear that the informal waste economy operates alongside an effective and innovative waste management system. The sections also highlighted that the attitude of the CoCT towards informal waste collection varies from hostile to recognising the importance of subsistence work. These sections moreover showed that only a small portion of the collectors fall under the scope of regulation of the City. This raises the following question: if informal collectors are largely not regulated by the CoCT, who regulates their work, what parts are regulated and how is it regulated? This study has identified three areas that shed light on these questions.

The first area that the study identified is the non-humans, i.e. the forms of transport and storage facilities that are utilised in informal waste activities. The above mentioned Integrated Waste Bylaw only makes provision for formal waste handlers and outlines how waste ought to be transported and stored in a particular manner. However, as the first section shows, there are other means by which waste is transported and stored in the city. For example, *skarelaars* use trolleys to transport waste and store their waste in old baths in their backyards. These means of storing and transporting waste are often considered 'unconventional' and fall outside of the scope of the waste management policies and by-laws of the City. Yet, these means are regulated in various ways by formal and informal actors and arrangements. The trolley is regulated by a combination of formal and informal arrangements that include City Improvement Districts and local residents, while the other forms of

transport such as carhorses and *bakkies*, and storage facilities are formally regulated by the by-laws of the City and non-profit organisations, such as the CHPA. As a result, the experiences of what enables or constrain informal waste work are not uniform.

The next area that the study identified is the places where informal waste activities are carried out. As mentioned before, the coupling of waste infrastructure with public-private partnerships has pushed collectors to find alternative sources and places such as the streets (public) and commercial spaces (private) to recover waste. These places can be considered as workspaces where informal collectors engage in sorting and storing waste. The by-laws and norms and standards only cater for a particular type of storage and handling of waste and exclude all the other places where waste work is carried out. These places, although not regulated by the City, are regulated by other actors who create rules and standards for informal waste work.

Finally, the study identified how informal collectors mobilise resources through various formal and informal arrangements to achieve their goals. In order to deal with the challenges posed by these various arrangements, informal collectors are involved in the process of assembling humans and non-humans and navigating their way through these arrangements. It is in this process that rules are often times actively created between informal collectors and other actors. This process also provides a regulatory framework within which informal collectors operate.

With this in mind, the next three chapters turn to consider how informal waste activities are regulated in the city. It focuses on three main areas: how workspaces are organised, how they mobilise resources and how non-humans act to steer the flow of events. The next chapter pays close attention to the following question: what is the role of non-humans in informal waste activities?

## Chapter Five: Non-humans as ‘Regulators’: The Role of Non-humans in Informal Waste Activities

### 5.1 Introduction

In the last chapter, informal waste collection was situated in the broader regulatory context of waste minimisation in Cape Town. In so doing, it highlighted two main points. Firstly, it showed how and where informal collectors’ work determined who regulates their activities. Secondly, it showed that, in addition to waste management policies and legislation, informal waste activities are regulated by multiple actors (both human and non-human), formal and informal arrangements and institutions. This part of the thesis moves the analysis one step further and takes a closer look at the waste collectors, and how waste activities are regulated in the various places in the city. It begins to answer this question according to three main research issues (as highlighted in Chapter Two). The first finding, the focus of this chapter, will be guided by a central question: What is the role of non-humans in informal waste activities? This question is important because answers to it will add to a better understanding of how informal activities are regulated.

This chapter draws on the experiences of *skarelaars*, ‘carties’ and ‘bakkie brigade operators’ in order to understand the role non-humans, such as trolleys, carts, horses, *bakkies* and storage facilities play in their daily work experiences. In doing so, it argues that non-humans should be considered as regulators that actively shape the relationships between waste collectors with various actors in the city. I highlight that, if attempts are made to understand how informal activities are regulated, then it is necessary to develop an analysis that includes both human and non-humans actors. I also argue that non-humans form an integral part of the daily informal activities and should not be treated in isolation, as mere objects or resources that have no agency. By exploring the role of non-humans as regulators, this chapter will improve our understanding of regulation in urban informal economy by highlighting that it is not only rules, norms, institutions that regulate informal activities non-humans also play an important role in regulation.

Following this introduction, this chapter is divided into four sections. The next section considers waste infrastructure as regulators. It discusses how trolleys, carts, horses, *bakkies* and storage facilities are key actors in shaping the flow of events that constitute the lived experiences of the participants. The following section provides an overview of the non-humans that are necessary to carry out informal waste work. From this I move to discussing how non-humans such as trolleys, carthorses, *bakkies* and storage facilities regulate informal waste activities. In this section I outline five empirical examples to demonstrate the role of non-humans in waste activities. The following section discusses the implications these findings have for existing literature and concludes the chapter.

## 5.2 Waste Infrastructure as Regulators

As explained in Chapter four, trolleys, carthorses, *bakkies*, and storage facilities are important for the work of waste collectors. It assists them in the transporting and storage of waste. However, these are not the only functions that these non-humans carry out. Trolleys, carts, horses, *bakkies* and storage facilities shape the working experiences of waste collectors in a very particular way. These non-humans are not just resources or infrastructure that enables waste work. Drawing on the work of Latour (1992) these non-humans can be considered as ‘actants’, sources of action. However, the non-humans I consider in this chapter are different from Latour’s (1992) artefacts that are designed or built explicitly to act as regulatory agents. In this chapter, the actions that waste collectors delegate to the trolleys, carthorses, *bakkies* and storage facilities extend regulatory power to them.

In ANT terms, these non-humans are key actors in daily waste activities, and mediators of a certain types of relationships that link waste collectors, local residents, Carthorse Protection Association and many others. For this reason, I will consider waste infrastructure as regulators in this chapter. The next section provides an overview of the different types of waste infrastructure that is necessary to carry out daily waste activities.

### 5.3 Overview of non-humans

As mentioned in previous chapters, recycling is a volume-based industry and in order to make an income the collection of large quantities and good quality materials is essential. For this reason transport and storage space is important. It is also one of the major challenges that small-scale collectors face in carrying out their daily activities (Lowitt, 2008). Table 3 outlines the means of transport and the storage facilities that the different categories of informal collectors utilise to accumulate volumes and ensure good quality of recyclable materials.

**Table 3: Non-humans/Things necessary to carry out their work according to different categories**

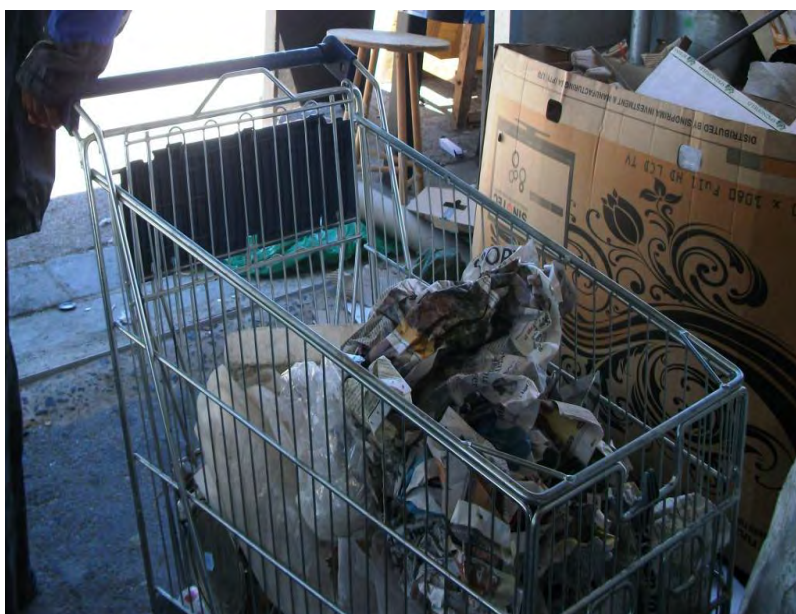
Non-Humans/Things	'Skarelaar'	'Cartie'	'Bakkie brigade'
Transport	Trolley	Carthorse	<i>Bakkie</i>
Storage Facilities or space	Backyard storage in drums, old baths, bale bags	Backyard storage	Backyard storage in containers, skips, bale bags, drop off sites

Table 3 indicates that the type of transport and storage facilities necessary for informal work depends on the level of operation. For instance, supermarket trolleys are used in micro-scale collection, whereas *bakkies* are used for small- to medium-scale collection. The type of storage facility that is used for the storage and bulking of waste is also determined by the scale of operation. For example, *skarelaars* who mainly operate in township areas store their waste in small containers, whereas *bakkie* brigade operators who engage in small- to medium-scale collection store materials in big containers such as shipping containers or skips. The next section provides an overview of these non-humans, focusing on its physical attributes and the role it plays in the daily work of informal waste collection.



### 5.3.1 *Skarelaars and Trolleys*

The supermarket trolley is the most common means of transporting waste for *skarelaars*. Supermarket trolleys have a galvanized finish with a plastic handle for a better grip. It is available in various sizes ranging from 60 litres, 100 litres, 125 litres, 150 litres and 210 litres.<sup>47</sup> The 210 litre trolley has a deep cage and is most commonly used amongst *skarelaars*. Trolleys are obtained either by being removed from the parking lots at shopping centres or grocery stores, or by recovering abandoned trolleys from locations such as the side of the road or open fields. Figure 10 is an example of a 210 litre shopping trolley.



**Figure 10: Shopping trolley<sup>48</sup>**

There are different ways of loading recyclable materials on trolleys. Some *skarelaars* use the black bags they obtain from bins to separate materials and tie these to the exterior of the trolley. The black bags on the exterior of the trolley usually contain lighter materials such as plastic and cans. Heavier materials such as scrap, paper, glass and so forth are placed inside the trolley. There are also instances where trolleys are modified by adding crates to increase the space for materials or

<sup>47</sup> Available: <http://www.trojantrolleys.co.za/supermarkettrolleys.html> [2012, October 8].

<sup>48</sup> All photographs were taken during fieldwork

removing parts of the deep cage to enlarge parts of its flat surface. Figure 11 and 12 are examples of where *skarelaars* modified trolleys and added crates.



**Figure 11: Modified Trolley**



**Figure 12: Modified trolley**

### 5.3.2 *Carties and Carthorses*

The carthorse is the form of transport for scrap metal collectors on the Cape Flats. Carthorses have a long history and date back to District Six when it was used to ‘*smous*’ (hawk) fish, fruits and vegetables and collecting bottles and bones by local hawkers.<sup>49</sup> Carts and horses are obtained in the following way: carts and horses are passed on from generation to generation; and carties who do not have horses rent horses and carts for a day for a R100 – R150 per day; others purchase horses and carts. Horses are stabled in the backyard of residences and each morning they are led between the houses to the streets where they are washed, brushed, and readied for the day’s work.<sup>50</sup> Once this is done a ‘lot check’ is performed, which involves assessing the condition of the horse, the state of its hooves and shoes, inspecting the harness, checking that the harness is correctly attached to the cart and the safety thereof, assessing the fitting of the harness, the throat lash, and the bit (Carthorse Operator Permit Score Sheet, 2012, June 12).

As explained in Chapter four, all carthorses are registered with the Carthorse Protection Association (CHPA) and have a yellow plate that serves as the permit to operate a working equine on the streets of Cape Town. The yellow plate contains information including the name and number of the horse and emergency contact details of CHPA.

Carts are loaded at the discretion of the driver and scrap is fastened with a rope or pieces of metal to ensure that materials do not slide off the cart. The volume of scrap metal on a cart depends on the size and build of the equine and not the height of the materials on the cart. For example small horses can handle 500kg of light aluminium, medium size horses can handle about 750 kg of light aluminium

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<sup>49</sup> Available: <http://carthorse.org.za/about/> [2012, October 11].

<sup>50</sup> (Tania Raised Us, 2004)



and large horses can handle up to 1 ton of light aluminium.<sup>51</sup> Figure 13 is an example of what carts look like:



**Figure 13: Examples of carts**

### 5.3.3 *Skarelaars and storage facilities*

The storage of recyclable materials, particularly for *skarelaars* who live in township areas, is very important. Unlike those who operate close to the CBD, these *skarelaars* bulk store their materials. The reason for doing so is because informal areas and townships are often situated far from buy-back centres and large scale collectors and because *skarelaars* in townships do not have appropriate transport to take their material directly to buy-back centres. For this reason, these informal collectors sell their material to *bakkie* brigade operators who operate in these areas. *Skarelaars* neatly store their materials in their homes or backyards in old baths, bale bags, drums, wheelie bins, crates and so forth. See below for examples of this:

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<sup>51</sup> Conversation with Carthorse Association Employee (2013, June 10).



**Figure 14: Materials in drums<sup>52</sup>**



**Figure 15: Materials in old bath<sup>53</sup>**

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<sup>52</sup> Source: Timm (forthcoming)

### 5.3.4 *The Bakkie of the Bakkie Brigade*

The word '*bakkie*', is an Afrikaans expression for a pick-up truck and is an important source of transport for the small-scale collectors. It is a motorised form of transport. Operators purchase second-hand *bakkies* from car dealers or individuals. An average Isuzu *bakkie* (see figure 9 as an example) can transport roughly 2.1 and 3.5 tonnes of recyclable material. Some operators also own trailers.

*Bakkies* are loaded at the discretion of operators. The type of material that is transported determines how it will be loaded. For instance, crushed glass, paper and plastic are transported in bale bags. Other types of glass such as returnable bottles are transported in crates obtained from distilleries. Bale bags are the preferred method of storage on transport as it makes the process of weighing materials easier at buy-back centres. Once all the material is loaded on the *bakkie* it is covered with a net and fastened with rope to keep the materials intact during transport.

### 5.3.5 *'Bakkie Brigade' and Storage facilities*

*Bakkie* brigade operators store materials in their backyards in skips or shipping containers. A skip is a large open-topped metal container designed for loading onto a special type of truck.<sup>54</sup> It comes in various sizes and has various loading capacities. Skips most commonly used by operators have a storage capacity of 5 tonnes. It is usually used to store cullet or scrap metal. Shipping containers are corrugated iron containers. These come in various sizes and the one mostly use by *bakkie* brigade operators have a loading capacity of 5 tonnes. The skip is obtained in the following way; *bakkie* brigade operators enter into agreements with large-scale collectors to provide a certain tonnage of materials per month. Once it has reached its capacity the large-scale collector collects the skip and waste and replaces it with an empty skip. Figure 16 is an example of a skip.

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<sup>53</sup> Source: Timm (forthcoming)

<sup>54</sup> Available: [http://en.wikipedia.org/wiki/Skip\\_\(container\)](http://en.wikipedia.org/wiki/Skip_(container)) [2014, June 28].



**Figure 16: Skip filled with glass**

In summary, this section outlined the non-humans necessary to carry out informal waste work. The type of non-humans required for informal waste activities depends on the scale of operation. The following section will present some of the findings of my empirical research on these non-humans as regulators.

#### **5.4 Non-humans as regulators**

In the following pages, I outline five examples of different types of waste management infrastructure and discuss how these non-humans act as regulators in the daily work of *skarelaars*, carties and *bakkie* brigade operators in the city.

##### **5.4.1 *The trolley as a regulator***

In the literature on informal waste activities, shopping trolleys are an important mode of transport (McLean, 2000; Langenhoven and Dyssel, 2007) and although there is mention of how trolleys are obtained there is very little consideration for what this means for informal waste work on the streets. This

section discusses the trolley as a regulator in the daily activities of *skarelaars*. Before embarking on this discussion, it is necessary to discuss how the physical attributes of the trolley enhance the work of *skarelaars* on the streets.

The physical attributes of the trolley regulate how *skarelaars* carry out their activities during collection. *Skarelaars* engage in on-site sorting, while collecting waste from wheelie bins. Recyclable materials are sorted and separated into different categories on the trolley. The deep cage and the exterior of the trolley allow for the tying of bags and holding of heavy materials such as scrap metal. For example, a *skarelaar* who 'owned' the trolley featured in Table 3 explained how he sorted the recyclable materials on his trolley. He collected four different types of materials that included scrap metal, plastic, paper and glass. The crate in the front of the trolley contains light metal, while heavier scrap metal and glass bottles are placed inside the cage of the trolley. This is important as it balances out the weight of the trolley and makes it easier for the *skarelaar* to push the trolley. Inside the trolley are some black bags containing glass, and white paper. The black bag that contains plastic includes various types of plastic, such as plastic bags, bread bags and plastic wrap. This bag is tied at the back of the trolley because it is lighter. The crate at the back of the trolley contains personal belongings and clothes that he obtained from the bin.<sup>55</sup> From this explanation it is apparent that, although the trolley is small and can only accommodate a certain amount of goods (as stated in section 5.3.1), *skarelaars* creatively utilise its spaces during the sorting process. They are able to perform highly systematic sorting procedures in the trolley.

In order to enhance the trolley as a mobile sorting site its physical attributes are easily modifiable. As Figures 11 and 12 shows, the trolley is often modified to accommodate more materials. In both these instances the *skarelaars* were able to load more recyclable materials on the trolleys. There are also instances where *skarelaars* remove the upper grid of the trolley and replace it with a broader base. This type of

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<sup>55</sup> Interview (2010, November 8).



modification expands the loading capacity of the trolley. For example, some *skarelaars* explained that with the broad base they were able to load more recyclable materials than they would with the upper grid in place (see Figure 17 as an example of this). The modified trolley with the broad base was also easy to pull. Langenhoven and Dyssel (2007) observed a similar trend in their study on *skarelaars* in Mitchell's Plain, Cape Town.



**Figure 17: Flat Trolley**

In addition to being a mobile sorting site, the trolley also serves as temporary storage site during the collection process. The deep cage facilitates the storage of recyclable materials in the trolley. Its solid grid and elevated position allows for the accumulation of relatively big loads while holding all in one place. This keeps the waste clean and separated until it is sold to buy-back centres. In this way the physical attributes of the trolley facilitates the process of adding value to waste by transforming it from a discarded material to a resource. The trolley thus becomes a temporary space for waste as it transitions from a discarded item found in a wheelie bin to a raw material that is converted for re-use.

While the physical attributes of the trolley affect the work of the *skarelaars* in a very particular way on the streets, it is also a regulator. It actively shapes the social

order in the areas where *skarelaars* carry out their collection. As mentioned earlier, the trolley is the property of supermarket chains and is often removed from these premises without permission. This essentially makes it stolen property.<sup>56</sup> In Figure 18 the disclaimer on the trolley reads that it is the property of the supermarket chain and anyone defacing it or removing it will be prosecuted.



**Figure 18: The trolley as property**

In the act of removing the trolley a number of things happen to the trolley. First, the trolley is stripped of its disclaimer and is appropriated as a waste management technology. With the physical stripping of the trolley it begins to take on another life outside of the context of the supermarket for which it was mainly designed. In its 'other' life the role of the trolley is very similar to that of its previous life in the supermarket. However, the only difference in its post-supermarket life is that the trolley transports post-consumerist waste that is seen not to have any value.

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<sup>56</sup> In the context of the urban informal economy specifically the informal waste economy, the shopping trolley as a regulator differs from other forms of stolen property. Unlike other forms of stolen property such as stolen radios, purses, and so forth, the shopping trolley in association with the *skarelaar* during informal waste activities co-constitutes and configures how waste material is recycled and how *skarelaars* interact with those around them. It also makes *skarelaars* targets of regulation and makes their work visible in a very specific way that often criminalises and makes them subjects of surveillance.

For the *skarelaar* the trolley becomes a key part of how the waste is separated, sorted and transported.

Second, in the act of stripping the trolley, some *skarelaars* also modify the physical attributes of the trolley to increase its loading capacity (as explained earlier) and to prevent its confiscation by (City Improvement District) CID officers and private security companies. The latter is a strategy many *skarelaars* employ in order to ensure that CID officers and private security companies do not confiscate their trolleys, because they are often employed by retail stores to retrieve stolen shopping trolleys. Langenhoven and Dyssel (2007) observed a similar trend with *skarelaars* and trolleys in Mitchell's Plain, Cape Town. In addition to preventing the confiscation of trolleys another reason why *skarelaars* also modify trolleys is to make it easier for CID officers and private security companies to see what is on the trolley. One *skarelaar* who operates in the Rondebosch and Rosebank areas explained the reason why he modified his trolley:

'Most the people from Woodstock, Salt River make the trolley like flat because the security don't like to see the big trolley...they like to see like this (pointing at the flat surface of his trolley)...maybe they gonna think you steal something...but if its like this maybe its easy to see that nothing you steal it...'<sup>57</sup>

In this regard, trolleys are not just modified to prevent confiscation but it is also modified to facilitate a particular type of interaction between *skarelaars* and CID officers and private security companies. Langenhoven and Dyssel's (2007) observations of the modified trolleys in areas such as Mitchell's Plain also shed light on the point that the modified trolley acts differently in different areas. While trolleys were modified in Mitchell's Plain to prevent confiscation, in areas where there are CID officers and private security companies it is a tactic to deal with apprehensive behaviour from these officers.

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<sup>57</sup> Personal Conversation (2013, September 2).

The appropriation of the trolley as a waste management technology also transforms the trolley into a site of policing in affluent areas, where the activities of *skarelaars* are policed. This is quite interesting as *skarelaars* who use trolleys on the Cape Flats do not experience the same type of policing as those who work in affluent areas. *Skarelaars* working with trolleys in affluent areas are subject to continuous CID officer, neighbourhood watch and local police questioning.

In affluent neighbourhoods trolleys disrupt the social order in two ways: firstly the appropriation of the trolley as a waste management technology defies ideas and perceptions of how waste ought to be treated and transported. The trolley actively challenges the common idea that is held around waste and how it ought to be recycled. According to this idea, waste is thrown into a wheelie bin which is collected by a municipal or private waste company truck and taken to the landfill site.

Secondly, not only does the trolley disrupt the sociality of waste it also disrupts the general social order in affluent neighbourhoods. It is often seen as a 'nuisance' and associated with criminal activities. One local community newspaper wrote about trolleys as follows: 'Are trolleys a convenience for scrap collectors or the getaway 'vehicle' for petty thieves?'<sup>58</sup> This statement adequately captures the notorious role that is delegated to the trolley. This notorious role has been delegated because of the manner in which trolleys are obtained and how it has been appropriated for petty theft in affluent neighbourhoods. In affluent neighbourhoods the trolleys are often used to transport stolen goods. Because of this notorious role, using trolleys as a waste management technology further exemplifies the criminalisation of *skarelaars*. To illustrate this point, a local community newspaper made the following comment: 'Every trolley you see is a piece of stolen property. It belongs to some or other retailer and most trolleys are clearly marked to confirm

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<sup>58</sup> Hassan, T. 2014. "No wheels to bring change?" *People Post*. 6 February. Available: [www.peoplespost.co.za/articles/articledetails.aspx?mode=news&id=47260](http://www.peoplespost.co.za/articles/articledetails.aspx?mode=news&id=47260) [2013, July 7].

this. Sadly because the trolley is used by some to conduct theft the fact is that the entire community suffers from such criminal activities' (McCain, 2014).

Because of the notoriety that is delegated to the trolley through how it is appropriated, *skarelaars* are treated in a particular way (see Chapter six). This is further exemplified by how the police and private security companies respond to *skarelaars*. Box 5.1 contains examples of the type of operations that are carried out to curb the use of trolleys.

### **Box 5.1: 'Operation Trolley' and Trolley Dash**

#### **Newspapers extract 5.1: 'Operation Trolley'**

In the beginning of March 2012 Operation Trolley was started by a private security company to weed out trolley operators in Rondebosch East and the surrounding areas. The main reason for this initiative is because trolleys were used to transport stolen goods. The spokesperson for Lansdowne Police station urged residents to call upon them when they notice people in their neighbourhoods pushing trolleys. They also appealed to residents not to give scrap metal from their yards because it is encouraging the activities. Since the inception of the operation 151 trolleys were confiscated in a month.<sup>59</sup>

#### **Newspaper Extract 5.2: 'Trolley Dash'**

'Trolley Dash' is a similar initiative by the police in the Diepriver area in collaboration with a private security company and the local neighbourhood watch who confiscated trolleys on waste collection days. A warrant officer explained that besides the fact that these trolleys are stolen goods, it also acts as a method of transportation for other stolen goods. The warrant officer further explained: "When a vagrant or a person collecting scrap is in possession of a stolen shopping trolley, it

<sup>59</sup>Amos, L. 2013. "Trolley brigade a nuisance" Peoples Post. 19 February. Available: [www.peoplespost.co.za/articles/articledetails.aspx?mode=news&id=50820](http://www.peoplespost.co.za/articles/articledetails.aspx?mode=news&id=50820) [2013, July 13].

makes it much easier to steal small items from gardens and the like and therefore it facilitates incidents of petty theft and general theft," In this instance the police noticed that the amount of trolleys confiscated decreased since the last inception because word had spread amongst *skarelaars* that the police were confiscating trolleys.<sup>60</sup>

Using terms such as 'Operation Trolley' and 'Trolley Dash' to get the trolleys of the streets signify the policing approach towards *skarelaars*. This approach, although not as intensive as drug operations or the 'war on crime', demonstrates how private security in collaboration with other law enforcement agencies want to establish dominance over those who use the trolley and how the trolley is being used. When these operations occur it becomes more than just the trolley, but the policing of particular types of people who are in neighbourhoods.

Trolleys in affluent areas also make *skarelaars* visible in a very particular way. Due to the various negative connotations and criminalisation of the trolley as an object it makes the *skarelaar* visible as a 'criminal' element in affluent neighbourhoods. Terms such as 'petty thieves',<sup>61</sup> 'vagrants', 'criminals'<sup>62</sup> are used to describe those who work with trolleys. In addition, trolleys also make a particular type of waste work visible. The sorting and separation of waste usually take place outside of the public eye somewhere at a sorting facility or a material recovery facility in the city. Because it is so far removed from the public eye, people do not see the process involved in sorting and separating waste from general waste. The work at the trolley makes this process visible to the public.

In summary, this section indicates that the trolley is a regulator. It actively shapes how *skarelaars* are able to sort and separate the waste. In addition, these waste

<sup>60</sup> Wiese, C. 2013. "Putting brakes on trolley crime" *People Post*. 16 July. Available: [www.peoplespost.co.za/articles/articledetails.aspx?id=73698](http://www.peoplespost.co.za/articles/articledetails.aspx?id=73698) [2013, July 23].

<sup>61</sup> Le Roux, M. 2012. "Trolleys store stolen goods" *People Post* (Lansdowne). 17 April: 3.

<sup>62</sup> Hassan, T. 2013. "Be more alert, locals warned" *People Post*. 22 January. Available: [www.peoplespost.co.za/articles/articledetails.aspx?mode=news&id=47260](http://www.peoplespost.co.za/articles/articledetails.aspx?mode=news&id=47260) [2013, July 13].

activities at the trolley regulate how *skarelaars* are treated in affluent neighbourhoods. The next section demonstrates how the cart acts as a regulator.

#### 5.4.2 *The cart as a regulator*

Carties use the cart in their daily activities to collect and transport scrap metal. However this is not the only role the cart plays. Like the trolley, the cart can also be considered as a regulator that shapes the social order in the spaces it operates. The physical attributes of the cart, such as the size, the big wheels, and half mechanised nature provide the cartie with the ability to cover longer distances. Its half mechanical nature plays an important role in increasing collection range. For example, a number of carties reported that they collected scrap in areas such as Panaroma, Parow, Goodwood, and Athlone, all of which are quite far from the areas they live on the Cape Flats. One cartie who lives in Delft expressed that he and '*Try me*' (the name of his horse) work in '*boere gebiede*' (Afrikaans word or phrase used to refer to previously white areas or affluent areas) such as Parow and Goodwood to collect scrap metal.<sup>63</sup>

The broad and flat surface of carts allow for a number of activities to take place. First and foremost it allows for the accumulation of large volumes of scrap. A cart, as seen Figure 12, has the loading capacity of 750kg. This is a relatively large volume in comparison to what trolleys can accommodate. Secondly, the broad surface of the cart also allows for other forms of usage, such as the removal of garden refuse. As mentioned in Chapter four, a number of carties explained that in addition to scrap metal collection, residents also pay them for gardening or refuse removal services. This point verifies that carties get a different type of access as opposed to those who operate with trolleys. It also shows that carties are able to diversify their income by engaging in service-based activities.

Aside from the physical attributes and its capabilities the cart also performs the role of regulator in the daily activities of carties. Carthorse commandment nine

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<sup>63</sup>Interview 1 (2013 October 23).

and ten (as outlined in Table 4 in Chapter six) regulate how carties ought to act on the cart. Carthorse commandment nine states that carties ‘will not be rude to members of the public’, directly regulating the behavior of carties on the cart. An employee of the CHPA explained that how carties conduct themselves on the cart is very important: carties are encouraged not to be rude to members of the public.<sup>64</sup> In addition to commandment nine, commandment ten addresses the notion of how carties ought to act with their carts. It states that carties: ‘Will not use their “lot” to steal or dump’.<sup>65</sup> In addition to the commandments, the role of regulator is further delegated to the cart by CHPA through the yellow number plate. The yellow number plate on the cart acts as a compliance mechanism to ensure that carties uphold the rules of CHPA. The following quote succinctly captures this point:

‘These ID plates are a visible representation of our aim of regulating the cart horse industry. It also serves to remind all cart horse owners and drivers of their responsibility to uphold the by-laws pertaining to the owning and handling of cart pulling equines’ (Carthorse Protection Association Newsletter, no date).

In this regard, the yellow number plate plays an important regulatory role by making the carthorse visible on the streets of Cape Town. The yellow number plate enables members of the public to report any issues pertaining to the carthorse. A CHPA newsletter stressed in capital letters the role of the yellow number plate: ‘THE BRIGHT YELLOW NUMBER PLATE AT THE BACK OF THE CART HAS AN ID NUMBER FOR THE HORSE. PLEASE QUOTE THIS NUMBER!’ (Carthorse Protection Association Newsletter, no date). This approach has worked well, as the members of public actively reported through Facebook and Twitter pages those carties who were in contravention of CHPA rules. This had a number of implications for carties, ranging from paying fines to more severe measures such as confiscating horses.

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<sup>64</sup> Interview 1 (2013, June 26).

<sup>65</sup> Carthorse Commandment Ten.



In addition to ensuring that carties uphold the rules of CHPA, the yellow number plate also facilitates access to certain spaces and opportunities for carties in the city. The yellow plate on a cart facilitates other income opportunities, such as garden waste removal services for carties. A number of carties reported that since they have a yellow number plate on their carts local residents are more comfortable asking them to clean their yards or to remove garden waste. In another instance, a cartie reported that on the days when scrap metal collection is slow he goes around in the Goodwood, Bothasig and Athlone areas asking people if they wish him to remove their garden waste for a price (Interview 4, 28 June 2013). Carties also reported that with the yellow number plates on their carts they are allowed to collect scrap metal in certain areas, whereas this was difficult before they had yellow number plates.

The content on the cart during collection transforms the cart into a space of surveillance. Like in the example of the trolley as a regulator, the cart takes on the same position when it works on the streets. However, the difference is that the type of material that the cart transports transforms it into a site of surveillance where CID officers and the local police regulate the cartie. A number of carties reported that they have been stopped and searched by police and CID officers. During these times carties are required to give an account of where they obtained the scrap metal. Having scrap on their carts is often associated with criminal activities, even though they have obtained it in a legitimate way.

Furthermore, like the trolley, the cart also disrupts the social order in affluent neighbourhoods because the same role that is delegated to the trolley as a notorious object associated with criminality is also delegated to the cart. Although some carties engage in petty theft, there is a large component of the cartie population that earn an honest living. Due to the problem of theft, there are some areas in the city where carties are not allowed to operate. If carties are found in these areas they are asked to leave or their carthorse is confiscated. When I asked a CID official for the reason for not allowing carties to operate in the area he responded: 'most of them and let me

not say most of them...let's say some of them that that we found here in Observatory actually stole from the properties where they passed' (Interview, 16 July 2013). This is quite interesting; even though not all carties engaged in criminal activities they are all treated as prospective offenders. In summary, this section shows that the cart is a regulator in the daily lives of carties. It facilitates access, while in other instances it also constrains the work of carties. The following section takes a look at the horse as a regulator.

### 5.4.3 *The horse as a regulator*

Although the horse acts together with the cart as a form of transport for informal scrap metal collection, it also acts independently. For this reason, the horse can also be considered as a regulator. It plays an important role in the daily activities of carties as 'income earners' (Carthorse Protection Association Newsletter, no date) and actively shapes the social order in the areas where it operates. Unlike all the other non-humans in this chapter the horse is the only living non-human. This section looks at the horse as a regulator by focusing on the CHPA Zero Tolerance Campaign. However, before embarking on a discussion of the Zero Tolerance Campaign and the horse as a regulator, it is important to discuss the physical attributes of the horse and how carties delegate work to it.

Carties take advantage of the physical strength of horses and delegate the work of pulling heavy cart loads of scrap metal to the horse. As explained earlier horses can handle a cartload of 500 kg to 1 ton of scrap metal, depending on the type of scrap and the size of the horse. Due to this, collecting scrap metal with a cart horse is relatively easier than collecting with a trolley. In addition, carties are also able to expand their collection range, collecting waste in various areas across Cape Town.

The physical characteristics of the working horses directly affect people encountering them and for this reason local municipal bylaws regulate its presence

in public space. The City of Cape Town Animal Bylaw<sup>66</sup> provides a regulatory framework to govern the control of animals throughout the city, which include dogs, cats, and working equines. Chapter four of the Bylaw deals particularly with working equines. Section 19 focuses on the control of working equines in the city. It introduces a series of prohibitions pertaining to working equines. The purpose of this section is threefold; a) to ensure that working equines are regulated in public spaces; b) to ensure the safety and security of the broader public; c) to ensure that those operating the horse have a permit to do so and abide by the legal requirements for carts. The regulation of the working equine in public spaces transforms the horse into a site of regulation.

CHPA has codified the bylaw in its practices and created the Ten Carthorse Commandments to ensure that carties uphold the law. The CHPA ensures that carties uphold the law through various measures. The Zero Tolerance Policy is one of the key approaches of ensuring that carties are upholding their end of the bargain when it comes to horses. The Zero Tolerance Policy officially came into effect in 2013 in order to protect working cart horses from owners and drivers who abuse and neglect the horses. This particular policy and the adoption of a strategy to enforce it have effectively transformed the horse into a site of regulation in the following ways: first, it regulates how carties treat the horse. If horses are neglected or abused, carties face legal ramifications. The following quote captures this point succinctly:

‘It is said that their Zero Tolerance Policy is aimed at bringing abusers to book, and ensuring that they are held accountable for their actions...’<sup>67</sup>

In addition to regulating how carties treat their horses, the second way of transforming the horse into a site of regulation is through patrolling, call-out services and roadblocks. As explained elsewhere, CHPA patrol and have road blocks at intersections close to where carties reside in order to ensure that carties uphold

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<sup>66</sup> This bylaw is aligned with the Animal Protections Act 71 of 1972.

<sup>67</sup> Available: <http://carthorse.org.za/2013/12/5-horses-confiscated-for-neglect/> [2014, June 18].

the rules. During patrol and roadblocks horses are inspected to see if they are in good condition and with fitting harnesses. This involves inspecting the carthorse with a checklist that derives from the 'Ten Carthorse Commandments'. For example, a post on the CHPA website read as follow: 'A Roadblock set up this morning on Vanguard Drive to perform a surprise check on working cart horses. Amanda was found working with a bad harness wound and was sent home. Her driver was issued a written warning...' <sup>68</sup> In this regard, the horse is a powerful actor in the daily activities of carties. If they are not treated according to the rules of CHPA there are serious consequences for the carties. In other instances, carties who were found in contravention of the rules related to the working horse had their horses confiscated temporary or indefinitely.

In summary, this section demonstrates how the horse is a regulator in its own right. The horse can be considered as a non-human agent that actively shapes the flow of events for carties. The next section demonstrates how the *bakkie* acts as a regulator.

#### 5.4.4 *The bakkie as a regulator*

The *bakkie* is also a regulator in the daily activities of *bakkie* brigade operators. The *bakkie* is a mechanised form of transportation. The compact physical design of the *bakkie* makes it the most desirable form of transportation for small-scale waste collection. A number of *skarelaars* and carties expressed their desire to purchase a *bakkie* to upscale their activities. The mechanised nature of the *bakkie* allows them to expand their collection sites. *Bakkie* brigade operators indicated that they collect in different areas across the city.

The physical attributes of the *bakkie* allow for the storage of large volumes of waste.<sup>69</sup> For instance the broad surface of the *bakkie* can accommodate large volumes

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<sup>68</sup> CHPA. 2013. Vanguard roadblock. Available: <http://carthorse.org.za/2013/02/vanguard-roadblock/> [2014, September 29].

<sup>69</sup> In Afrikaans a '*bakkie*' means a small basin, referring to the basin-like attribute of the rear end of the pick-up truck.

of recyclables. The *bakkie* (as seen in Fig. 9) has a loading capacity ranging between 1.5 to 2 tonnes.<sup>70</sup> The loading capacity also allows for *bakkie* brigade operators to transport large volumes of waste to buy-back centres. It also has a heavy duty towbar allowing for the choice of adding a trailer, which increases the capacity of waste to be transported. These physical attributes makes it more acceptable as a waste management technology in comparison to trolleys and carthorses. As a result, *bakkies* are able to operate in spaces where trolleys and carthorses are not.

While operators are able to gain access to spaces and opportunities that *skarelaars* and carties are not able to access, the *bakkie* regulates the work of operators in the following ways. Firstly, because of its size, *bakkies* are associated with small-scale activities and this has implications for their work at commercial premises. Some *bakkie* brigade operators reported that they have lost their contracts at commercial premises because they were considered too small. The notion of being associated with 'small' is what regulates the work of *bakkie* brigade operators at commercial premises. At commercial premises there is a perception of how waste ought to be treated and this is evident in the spaces that are allocated for waste management. The perception is that waste ought to be treated with large and technologised waste management infrastructure. Any form of waste collection that does not fit this particular image is seen as too small to deal with large volumes of waste. A *bakkie* brigade operator who has collected waste at commercial premises for a month was told to stop his collection. The operator received a warning from property management services about his vehicle entering the premises. When I asked him what the reason was for the warning, he informed me that it is because they do not want *bakkies* on their premises because these vehicles are too small to handle large amounts of waste (Interview 1, 2 December 2010).

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<sup>70</sup> In this case, the loading capacity of the Isuzu *bakkie* refers to the payload of the vehicle which refers to the loading box from which income is derived. The loading capacity of the *bakkie* also differs depending on the type of recyclable materials that is loaded in the loading box.

Being 'small' is not only related to the capacity of waste that operators are able to handle, but also serves as euphemism for saying that operators do not fit the profile of waste management companies. Large-scale waste management companies have branded trucks with their logos and their employees are fitted in the protective clothing that is appropriate for waste collection. *Bakkie* brigade operators do not operate with branded non-humans nor wear protective clothing and this makes property management services at commercial premises uneasy because they cannot clearly identify who is accessing their premises. As a result, *bakkies* become a security issue at commercial premises. This is particularly the experience of operators who work at big shopping complexes.

Those working at smaller complexes do not have the same experiences. At the big shopping complexes entry is negotiated through things, such as the size of the *bakkie*, logos on *bakkies* and protective clothing. At smaller shopping complexes, being 'small' is a combination of the size of the *bakkie* and the type of infrastructure that it can accommodate during collection. Big shopping complexes have the large infrastructure and very often have separation at source systems in place, while this is not the case with most of the smaller complexes. As a result of this, *bakkie* brigade operators ask these shopping complexes to supply their own wheelie bins in order to separate the recyclable materials from the other waste. Once these bins are full, *bakkie* brigade operators are expected to collect it. However, there were instances when bins were full and operators were not able to transport all the bins at once. One *bakkie* brigade operator who had this experience came back the following day and was given a warning by the manager of the shop from where he collected waste. The next time he returned the manager told him to leave the wheelie bins and only collect the recyclable material. He was told not to return again. When I asked the operator why the manager made this decision he informed me that a large-scale waste company took over the collection of recyclable material and provided the client with a container and a skip to store the waste. He was told that he was too small to handle all the waste (Interview 1, 2 December 2010).

The *bakkie* also plays a regulatory role at other commercial premises, such as office buildings. Working at commercial premises with a *bakkie* that does not have a logo was often considered a security concern. In a conversation with a cleaning manager at an office building I learned that *bakkie* brigade operators who have branded vehicles find it easier to access commercial premises because they were easily identifiable by security. Those who do not have branded vehicles had to give security guards the contact details of the department from which they were collecting recyclable materials. If there was no-one to answer the telephone at the department, *bakkie* brigade operators could not carry out their collections (Interview, 24 January 2012).

In summary, the regulatory role of the *bakkie* varied depending on the space where it operated. This section shows that at big shopping complexes the *bakkie* plays a different regulatory role in comparison to smaller shopping complexes. Working with a *bakkie* that was not clearly labelled constrained the access of operators to commercial premises. The next section looks at storage facilities as regulators.

#### 5.4.5 *Storage facilities as regulators*

Storage facilities such as skips, shipping containers, bale bags and so forth may appear to be just mere objects that store recyclable materials. However, these non-humans are actors in the daily lives of waste collectors. This section looks at storage facilities and the regulatory role it plays in connecting formal and informal actors.

The physical attributes of the storage facilities allow for temporary storage of recyclable materials. For example, *skarelaars* who live in informal settlements temporarily store their material in old baths, bale bags and drums (see Figs. 14 and 15 as examples) to attain bulk amounts of materials. These small facilities play an influential role in bulking material as *skarelaars* who live in township areas do not sell their materials daily unlike those who work close to the CBD. In addition, these

small facilities take up very little space and can be positioned anywhere outside, inside or on the roofs of their homes. This is important, because the mobility of the facilities allows materials to be safe and secure from theft and from rodents.

Since, *bakkie* brigade operators operate on a bigger scale in comparison to *skarelaars* storage facilities are larger. Skips and shipping containers are slightly different from the smaller facilities because they have a deep surface and are enclosed. Because of its size and physical characteristics it can temporarily store up to 25 tonnes of recyclable materials. Unlike, the smaller storage facilities, skips and shipping containers needs a large space and are not easily movable and thus remains stationary. It requires a different type of removal that involves a big truck with a crane. Like the smaller facilities it plays an important role in storing large quantities of recyclable materials.

These different types of storage facilities facilitate the process of transforming waste from a discarded material to a valuable commodity. Smaller storage facilities (as seen in Figs. 14 and 15) add value to recyclable material because it is deep enough for *skarelaars* to crush glass. It keeps glass separated from other materials and keeps it clean from contamination of sand and other types of liquids that could degrade its value. Skips in particular have deeper surface areas, holding large volumes of crushed glass, which also keeps glass clean from contamination of liquids that can degrade its value. Shipping containers serve a similar role in the storage of paper. It is completely enclosed, designed to keep paper dry and protecting it from the wet, humid weather conditions of Cape Town.

The size of the storage facilities regulates how materials can be stored and when it can be sold. For example, in the case of *skarelaars*, the small storage facilities regulated how recyclable materials were treated. For instance, instead of keeping glass, like returnable bottles, some *skarelaars* would crush it, because it allows them to accumulate or get more into one bag. Another reason why crushed glass is highly prevalent with *skarelaars* who have small storage spaces is due to the theft of



recyclable materials. In this instance, glass is crushed in order to prevent it from being stolen by their competitors or youth in the community (Personal Conversation, 17 November 2011). Although the strategy of crushing glass makes it easier to store and prevent theft it influences the earnings made from recyclable materials.

Unlike the smaller storage facilities, skip and shipping containers can also be considered as a site of regulation. The National Norms and Standards for the storage of waste specify that storage facilities must be operated within its design capacity and the waste storage container must not be overfilled (Section 9 (4)). In addition, those who store waste in skips and containers are required to apply for waste licences (in the case of large-scale operations) or waste permits (in the case of small operations). Those who are found in contravention of these Norms and Standards are fined or their waste permits or licences are taken away.

Storage facilities mediate relationships between formal and informal actors. For example, skips and shipping containers play an important role in bringing formal and informal actors together. The tenure of a branded skip or shipping container signifies that operators are able to deliver the required volumes. This allows for the direct engagement with converters and operators and *bakkie* brigade operators are able to cut out middlemen. Box 5.2 (below) is an example of a *bakkie* brigade operator who was able to cut out the middleman because he had a skip.

#### **Box 5.2: Cutting out the middle man**

James approached a middle man for a skip because he regularly dropped material there. The owner agreed and offered James two skips for cullet (crushed glass). James and the owner then signed an MOU stipulating that James will fill the skips with 20 tons of cullet per month and the owner will collect the skip once it is full. The owner also agreed to pay James R420 per ton of cullet.

For the first few weeks the skips were collected on time and the money was paid immediately. A few weeks later, the owner requested that James return one of the

skips because he wanted to use it for scrap metal. As time went by, the owner did not collect the remaining one skip as stated in the agreement, and when he collected the skip he did not make the payments on time. Over time the owner owed James a very large sum of money. While trying to get his money from the owner, James started looking at other large-scale collectors because he felt confident that he could fulfil the tonnage per month required by the waste industry, being 20 – 25 tons. James then contacted a glass converter and is now supplying directly to this particular converter and is paid a higher price per tonnage for his cullet<sup>71</sup>

Box 5.2 is an example of how the possession of storage facilities mediates access to formal actors. In this example, possessing a skip directly affected the *bakkie* brigade operator to enable him to sell his material to a converter. Being in possession of a skip is a marker that the operator is able to collect the large volumes that converters require.

Storage facilities also organize the space in which it is situated. The contents in storage facilities organize how people act around it. For example, the open storage of glass in old baths, drums and so forth has made others aware of its value. A number of *skarelaars* reported that they have a lot of competition and face the challenge of theft of recyclable materials. The following quote explains this: ‘some of them have competition in the area and some tend to steal the bottles and they would steal and maybe sell for it themselves. People who never had any interest in that is now picking...’<sup>72</sup> *Bakkie* brigade operators who have skips or shipping containers face similar challenges. Skips and shipping containers are vandalized and recyclables materials are stolen.

In summary, this section shows that the storage facilities are not mere resources that enable the storage of recyclable materials but active participants in steering the flow of events. The findings demonstrate that it is a regulator that mediates

<sup>71</sup> Personal Conversation (2010 December 12).

<sup>72</sup> Personal Conversation (2011, November 17).

relationships between formal and informal actors. It also mediates how non-humans act by transforming waste from a discarded material to a valuable commodity.

## 5.5 Discussion and conclusion

As Chapter Two highlighted, the role of non-humans are largely overlooked in the urban informal economy literature. Reflecting on the experiences of *skarelaars*, carties and *bakkie* brigade operators, this chapter provides insights for the urban informal economy literature. To date, the discussion of non-humans in the informal economy is largely overlooked. The findings in this chapter are significant in at least three respects: the first is that non-humans are potential actors and not mere passive objects or resources necessary for informal waste work. The second is that non-humans are active participants in steering the flow of events. Finally, agency is not only located in the human actor, but also in the non-humans.

Firstly, the findings show that non-humans such as trolleys, carthorses, *bakkies*, skips, and storage facilities are important for the work of informal waste collectors. These non-humans play an important role in the sorting, storage and transport of waste. This finding resonates with empirical studies in South Africa (McLean, 2000a; Langenhoven and Dyssel, 2007; Engledow, 2005; Samson, 2008; Benson and Vanqa-Mgijima, 2010; Schenck and Blaauw, 2011), in Brazil (Medina, 2007; Gutberlet, 2009) and Egypt (Fahmi, 2005; Fahmi and Sutton, 2010).

Secondly, the findings show that the non-humans differ according to the level of operation. For instance, micro-scale collection requires trolleys and smaller storage facilities to carry out their work, while *bakkie* brigade operators require mechanized forms of transport and larger storage facilities. Although the use of different forms of transport and storage facilities is mentioned in local studies by Langenhoven and Dyssel (2007), Samson (2009), Benson and Vanqa-Mgijima (2010) and Tischler (2010) very little attention is given to the variation of infrastructure that is necessary for informal waste work. This finding provides further empirical support to these studies.

The findings suggest that rather than viewing non-humans, such as trolleys, carts, horses, *bakkies* and storage facilities as passive objects they should be viewed as potential actors. This finding confirms the contentions of Latour (1992; 2005), Callon (1986), and Law (1987) that non-humans are actors. The finding is also consistent with empirical studies that employ ANT approaches in environmental conflicts (Goedeke and Rikoon, 2008; Magnani, 2012), animals as political subject or agents (Hobson, 2007; Dempsey, 2010; Notzke, 2013), and pharmaceuticals as regulatory agents (Cloatre and Dingwell, 2013). However non-humans as actors are largely overlooked in the informal economy literature, because these are very often considered as passive objects or resources (see for e.g. Brown, 2006; Medina, 2007; Gutberlet, 2009). The implication here is that non-humans have the capacity to act and be acted upon.

The findings suggest that non-humans performed the role of regulator. Trolleys, carts, horses, *bakkies* and storage performed the role of regulators that enabled or constrained waste activities. This suggests that non-humans played an active role in creating and contesting social order. This finding is consistent with the work of Brown (2006) on crime and technology, Hentschel (2010) on security governance, Whitson (2011) on waste material and Lawhon (2013) on alcohol. However this finding has implications for informal economy literature as it does not consider non-humans as regulators in the analysis of informal activities and how it is regulated. In the current debate on informal activities and how it is regulated, regulators are human or discussed in institutional forms (Lindell, 2010b; Meagher, 2010b).

The findings also suggest that there was a difference in how the non-humans regulated. For instance, it shows that things such as trolleys, carts, *bakkies* and storage facilities regulated waste activities in a very particular way in comparison to the horse as a living non-human. The role of animals as regulators are not new: it has been explored in political geography (Hobson, 2007); hybrid geography (Whatmore and Thorne, 2000), feminism (Haraway, 2006); and conservation studies (Dempsey,

2010; Notzke, 2013). This finding provides empirical support to this growing body of literature.

The findings suggest that non-humans acted as mediators. They facilitated the process of transforming waste from a discarded material to a valuable commodity. This finding confirms the work of ANT scholars, such as Latour (2005) and Murdoch (1997a, 1998). It is also consistent with empirical studies in regulation (Cloatre and Dingwall, 2013) and security governance (Hentschel, 2010) both of whom suggested that non-humans act as mediators. However, the idea of mediators in the regulation literature is largely human-centred (Black, 2002b; Abbott and Snidal, 2013). The same can be said for informal waste literature, where the idea of mediators is also human-centred (Medina 2000, 2007; Gutberlet 2009; Fergutz et al., 2011; Dias, 2012). The implication here is that non-humans in the informal economy should be considered as mediators that make a difference in their own right.

The finding suggests that non-humans like trolleys, carts, horses, *bakkies* and storage facilities actively enabled or constrained the work of *skarelaars*. With regard to this, the findings show that there is a difference in how the non-humans constrained the work of waste collectors. For instance, non-humans that were mobile in the city constrained the work of waste collectors in a very particular way in comparison to those that were stationary. For instance, the regulatory role of mobile non-humans, such as trolleys, carts, horses, and *bakkies* were shaped by the context within which it operated. This finding has implications for informal economy literature. It implies that non-humans shape the context in which it operates.

The finding suggests that non-humans have agency. It shows how agency was not necessarily located within the human agent, as is the current argument in informal economy literature (see for e.g. Simone, 2004; Lindell, 2010a, b, c; Meagher, 2010b). This finding has implications for informal economy literature. The implication here is that agency is distributed across the human/non-human divide.

In conclusion, the findings in this chapter have highlighted that non-humans play an integral role in developing an understanding of how informal economic activities are regulated. This chapter, focusing specifically on non-humans, suggested the following: first, non-humans are not mere objects or resources in the work of informal collectors but should be seen as active participants. Second, non-humans are also regulators that have the capacity to act and be acted upon. Lastly, the agency of non-humans comes from negotiations, arrangements and contestation between informal collectors and other actors.

## Chapter Six: 'Regulatory Spaces' in the Informal Economy: Organizing Work Spaces of Waste Collectors

### 6.1 Introduction

The previous chapter explored the role of non-humans as regulators in the daily activities of waste collectors. This chapter describes the various ways in which these non-humans organise the workspaces of waste collectors in Cape Town. For this reason, it asks the following question: how are workspaces organised in the informal waste economy? This question is important because answers to it provide a better understanding of how spaces are organised in the informal economy. It argues that spaces are organized by assemblages of humans and non-humans. I demonstrate that this process is iterative: space is organized by assemblages and then assemblages organize space. I also highlight that workspaces for informal collectors are more than mere physical places where they carry out their work, but should be considered as an assemblage of humans and non-humans. By employing the idea of space as an assemblage of humans and non-humans, this chapter expands our understanding of how spaces are organized in the informal economy by drawing attention to the active role of non-humans in the production of spaces.

The remainder of this chapter is divided into four sections. Section 6.2 starts off by looking at how informal economy literature has studied how spaces are organised. Through this discussion I consider workspaces as a 'regulatory space'. Following this discussion, the next section presents the findings in the following way: first, it provides an overview of the workspaces where *skarelaars*, carties and *bakkie* brigade operators carry out their work through a description of the workspaces and outlining the actors that regulate it. Secondly, it draws on five examples to demonstrate how spaces are organized by assemblages of human and non-humans. Finally, I discuss the implications of these findings for the literature and conclude the chapter.

## 6.2 Workspace as a 'Regulatory Space'

A large number of informal waste collectors make an income from collecting waste from various public spaces in Cape Town. These spaces are an important source of livelihood as they present the only opportunity to access recyclable materials for such people. They can also be considered as a workspace, where informal collectors engage in on-site sorting and the separation of recovered materials. Because of the nature of this activity, it is a place where informal waste collectors and the waste that they collect interact, come together and intersect with formal actors in various ways. For this reason, the workspace can be imagined as a 'regulatory space'.

In order to demonstrate how workspaces are organised, this chapter employs the 'regulatory space' metaphor. 'Regulatory space', as a metaphor, is not new to those interested in the question of regulation. Hancher and Moran (1989) were the first to coin the term and employed it as an analytical construct to illustrate the power-play in regulatory processes. Since then, it has been employed to describe power relations in regulatory processes (Shearing, 1995), to discuss the nature of regulatory spaces as fragmented and the role of non-state actors in institutional design and reform (Scott, 2001; Thatcher and Coen, 2008), while other scholars in the study of regulation have used it broadly (Daintith, 1989; Coen and Thatcher, 2008; Dibden and Cocklin, 2010; Levi-Faur, 2011). While, these different applications of the metaphor allow for a better understanding of power relations in regulatory processes, it mainly focuses on the role of human actors and does not pay sufficient attention to the role of non-humans.

The notion of space and how it is organised has received considerable attention in the literature. Largely informed by Lefebvre, informal economy literature considers spaces as the outcome of social, economic, and political processes. There are two strands of thinking of how spaces are organised in the informal economy. One argues that informal actors appropriate and claim their space in a particular way. Bayat (2000) refers to this process as at the 'quiet



encroachment of the ordinary'. Another strand of thinking argues that the entanglement of formal and informal practices organise space (McFarlane, 2012). The former argues that informal actors practice a particular type of citizenship through mobilization and resistance (Brown, 2006; Hansen, 2010; Lindell, 2010a, b). The latter argues that formal and informal practices are entangled (Kudva, 2009; Hackenbroch, 2011, 2013, 2014). While, the organisation of spaces has been discussed prominently in relation to the informal economies of street vending, informal housing and so forth, it has received less attention in the informal waste literature, with the exception of a few scholars (Millar, 2008; Whitson, 2011; Samson, 2012).

For the purposes of this chapter I draw on Latour's (1987) notion of non-humans and extend the 'regulatory space' metaphor to include non-humans. In so doing, I consider 'regulatory space' as an assemblage of human and non-humans. This notion of the metaphor is useful because it draws attention to multiple regulators (both human and non-human) and how these organise the daily activities of waste collectors. This chapter empirically demonstrates how non-humans act independently and interdependently with *skarelaars*, carties and *bakkie* brigade operators to steer the flow of events. It looks at how assemblages of human and non-humans act with each other, act upon each other and affect those around them.

Thinking of workspaces as 'regulatory spaces' provides an opportunity to look at spaces beyond existing explanations in the informal economy literature as the outcome of local/global; public/private; and formal/informal factors. The idea of a workspace as an assemblage is a useful lens to focus on non-humans as active participants in organising space. This includes non-humans, such as waste materials like scrap metal, trolleys, carthorses and *bakkies*. Secondly, workspaces as an assemblage enables one to analyse space as a cluster that is consistently shaped through the interaction of humans and non-humans acting together to shape the flow of events. Although I refer to categories of human and non-humans, my intention is not to separate the two or put them at odds with one another, but rather to demonstrate the complex interrelations that organize space for informal collectors.

So far, this chapter has established the workspace of informal waste collectors as an assemblage of humans and non-humans. The following section provides an overview of the different workspaces where informal waste collectors carry out their daily work in the city.

### 6.3 Overview of workspaces

In this section, I look at how spaces are organized from the perspective of five particular workspaces, where sorting, separation and collection are carried out on a daily basis: the 'wheelie'<sup>73</sup> bin', the streets (*'op die pad'*), commercial premises, backyards, and Community Improvement Districts (CIDs). These spaces vary in terms of their geographical location, their size, their use (whether it is public or private), and are regulated by different actors. Although the nature of these spaces varies, these tell a similar story of the perceptions and techniques of regulation that inform how spaces are organized for informal waste collectors.

*The wheelie bin* is a plastic wheeled waste container with a capacity of 240 litres. It is provided by the City of Cape Town to residents for the storage and disposal of waste (City of Cape Town, 2006). Wheelie bins are collected once a week and loaded with a hydraulic compactor truck (Visser and Theron, 2009). Once placed outside the gate of residences in affluent neighbourhoods on waste collection days the wheelie bin becomes the workspace of informal waste collectors. Informal collectors who travel to different neighbourhoods start work in the early morning before the waste collection trucks arrive. Because households are not compelled to separate waste, *skarelaars* carefully sort through wheelie bins recovering recyclable materials. This activity is considered a nuisance by local residents and associated with criminal activity. As a result of this, *skarelaars* bear the brunt of harassment from the police and private security companies and the negative attitude from local

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<sup>73</sup> Afrikaans speakers have a penchant for placing ordinary nouns into the diminutive, which influences many South African words. Attaching the letters 'ie', which denotes the diminutive in Afrikaans, to a word, even an English word, is therefore common. Here the English word 'wheel' – a characteristic of the waste bin – is given an Afrikaans diminutive to create a unique South African word. The South African words 'carties' and 'bakkies' too have been created through this process.

residents. The police, private security companies, neighbourhood watches look after affluent areas and provide security services.

*'Op die Pad'* is an Afrikaans phrase that carties use to refer to the various public spaces on the streets where they collect scrap metal. As explained in Chapter four, carties engage in door-to-door collection of scrap metal. For this reason, the streets can be considered as a workspace where carties collect scrap and transport it on their carts. This activity takes place in various areas across the city and includes areas such as Maitland, Athlone, Pinelands, Bothasig, Woodstock, Belgravia Road, Gugulethu, Mowbray and Rondebosch. The Carthorse Protection Association (CHPA) plays a key role in regulating the carting industry in Cape Town. The CHPA provides clinical help, patrol and call-out responses, veterinary, and rehabilitation services to all working cart horses and donkeys living on the Cape Flats. In addition to this, they also support and provide education and training to cart horse owners and drivers who use cart horses as a means of generating an income.<sup>74</sup> They also act as regulatory agencies in the pursuit of protecting working horses and donkeys from abuse. Other actors that regulate the work of carties on the streets include the police, local residents, and private security companies.

*Commercial premises* are an important source of livelihood for *bakkie* brigade operators. These include various privately owned spaces, such as shopping malls, office buildings, and supermarkets where *bakkie* brigade operators collect waste. Commercial premises can be considered a workspace *where bakkie* brigade operators enter into a contractual agreement to provide a collection service for recyclable materials and temporarily store their waste. Work at or in these spaces is mainly regulated by the clients, who determine when and how waste should be collected, by large-scale collection companies who collect the general waste stream at these spaces, by cleaning staff who separate the waste, and by property management and services who look after these spaces.

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<sup>74</sup> Available: <http://carthorse.org.za/>[2013, June 23].

*The backyard* refers to the backyards of the homes of *bakkie* brigade operators that serve as temporary storage sites. The backyard is a workspace for *bakkie* brigade operators where they engage in further sorting and separating recyclable materials that they have collected from commercial premises and which they neatly store in shipping containers or skips. This space is regulated by the following actors: the City of Cape Town, which determines how much waste can be stored on a residential property, the neighbours - who will complain if the stored waste spills onto their properties, and the *bakkie* brigade operators who look after these spaces to ensure that the waste does not pose a health risk or attract rodents.

*Community improvement districts* (CIDs) are residential zones that have acquired the status of special rating areas (SRA). In Cape Town, SRAs are defined as follows:

A Special Rating Area (SRA) refers to a clearly defined geographical area, approved by the City of Cape Town, in which property owners can raise levies to fund 'top up' services for that specific area.<sup>75</sup>

Community Improvement Districts have increased in Cape Town in the past few years. At present the City has 17 CIDs. A number of affluent areas in Cape Town have become improvement districts, such as Muizenberg, Groote Schuur (covers areas of Rondebosch, Rosebank, Mowbray), Observatory and Sea Point to name a few. These residential zones are an important source of waste and offer a valuable waste stream for *skarelaars* and carties. These are workspaces where *skarelaars* and carties sort, separate and collect recyclable materials. CID areas are looked after by private security companies who are contracted by CIDs in order to provide services, such as public safety, cleaning, greening etc. The following section outlines the empirical examples.

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<sup>75</sup> Available: <http://www.wid.co.za/news/faq-on-special-rating-areas-including-cids> [2014, June 30].

## 6.4 Organizing Workspaces: Empirical Examples

In this section I outline five examples to demonstrate how spaces are organized for informal waste collectors through the interaction of humans and non-humans:

1) ‘crime: keeping an eye on rummagers’ is an example of how the wheelie bin in affluent neighbourhoods is organized as workspace by the activity of rummaging through bins, the type of material that is collected, and the type of transport used. It invokes a space of surveillance.

2) The ‘ten carthorse commandments’ are an example of how a set of rules creates, prohibits, and facilitates interactions between humans and non-humans.

3) ‘Using your eyes and ears’ is another example of how the interaction between humans and non-humans is regulated by appealing to the senses of those who encounter this interaction on the streets.

4) ‘Small guys’ being muscled out by ‘big guys’ refers to the various ways in which large-scale waste companies push the *bakkie* brigade operators out and an example of how private spaces, such as commercial premises, are organised by large-scale companies who assemble humans and non-humans in a very particular way.

5) Finally, ‘the neighbours are all over us’ is an example of how waste, as a material, acts to shape and transform the meaning of the backyards of *bakkie* brigade operators.

All these examples share a common idea: that workspaces are not static physical spaces but are actively shaped and transformed by assemblages of humans and non-humans.

### 6.4.1 *Crime: Eyes on the rummagers: The wheelie bin*

In the early morning on waste collection days, before the arrival of collection trucks, the streets are busy with *skarelaars* moving from one wheelie bin to another.

*Skarelaars* open the lids of wheelie bins and carefully sort through household waste for recyclable materials. Because households are not compelled to sort their waste, *skarelaars* have to sort and separate recyclable materials from household waste at the wheelie bin (see Figure 19, an example of a *skarelaar* sorting through household waste). This presents the only opportunity for them to access recyclable materials, because landfill picking is prohibited in Cape Town. However, this activity is considered as more than just the mere sorting, separation of and collecting of recyclables. For the person passing by, the person at the wheelie bin is often ignored, invisible and sometimes greeted with puzzled looks. Some wonder why anyone would rummage through a bin, while others think that *skarelaars* are just '*bergies*'<sup>76</sup> looking for food. Others look upon the activity as disgusting, because why would anyone rummage through a bin without gloves touching waste that smells terrible or is covered with maggots?

While, the wheelie bin is a space where rummaging through bins are ignored, made invisible or stigmatised, it is also a space where the work of *skarelaars* are made visible in a very particular way. Rummaging through a wheelie bin in most affluent neighbourhoods in Cape Town is associated with crime. For this reason waste collection days become a spectacle, where *skarelaars* are systematically sorting through bins. The following quotes by private security companies explain this;

'...Dirt day is crime days ... you get people coming to '*skarrel*' and they will see eh there is a bike in the yard and I can get that and this ... they know the area and they know how to get the exit routes and they know the dirt days and so everything is just not dirt bin outside ... they can steal they can break inside your house...'<sup>77</sup>

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<sup>76</sup> An Afrikaans, particularly Capetonian, term for homeless people. Note again the diminutive added on to the Afrikaans word '*berg*' (meaning mountain), originally indicating a person that sleeps rough on the mountains of Cape Town. Today, of course, they sleep rough in many other spaces in the city.

<sup>77</sup> Interview 1 (2012, October 25).

‘There are way too many people wandering around our area on a Monday morning. Many of our incidents happen on “bin day” ...’<sup>78</sup>

While the link between waste picking and crime is well established in the literature, very little attention is paid to the reasons why it is considered a criminal activity. One of the reasons why the activity is associated with crime, particularly in Cape Town, is because the ongoing sorting occurs in middle-class neighbourhoods. *Skarelaars* and the activity at the wheelie bin disrupt the order of these neighbourhoods, because of the physical appearance of *skarelaars*, the way they speak and how they move through the neighbourhood. The majority of the *skarelaars* on the streets of Cape Town are ‘Coloured’ or Black. In addition some are homeless and others come from other areas to rummage through bins for recyclable materials. ‘Coloured’ or Black people dressed in a particular way, rummaging through wheelie bins in neighbourhoods like Rosebank or Rondebosch, are completely out of place. While accompanying a few *skarelaars* on their daily activities I observed how people would cross the road as soon as they noticed a group of people going through bins. I also observed how the laughter and jokes of *skarelaars* were often met by irritation of local residents. Moving through the neighbourhood from one wheelie bin to another, while constantly looking around, also made people who passed by very nervous. *Skarelaars* explained that the looking around and being alert is essential to the collection process, as they need to look to assess how many wheelie bins need to be covered and if there are any other *skarelaars* operating in the street. Once they have done a quick assessment of the road and the locations of the various wheelie bins they swiftly move from one bin to another. This combination of factors are considered as ‘undesirable’ and as the above quote shows is not recognised as an assessment of what needs to be done to carry out the sorting and separation as fast as possible, but rather as scouting the area to see what they can steal. While there are cases of some who do a combination of scouting for criminal opportunities and assessing the situation for waste work, *most skarelaars* do not steal from the areas

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<sup>78</sup> Newsflash 2013/10 posted by rnwmanagement on 13 January 2013. Available: <http://rnw.contextsolutions.co.za/content/2013/01/13/newsflash-2013-10/> [2014, April 3].

where they work. This combination of activities; assessing, rummaging, sorting and separating at the wheelie bin transforms the bin into a space of surveillance. A number of *skarelaars* reported that they are often stopped and searched, harassed or told to close the bin and move on.

The wheelie bin in itself is also an active participant in the criminalization of *skarelaars*. CIDs and local neighbourhood watches encourage local residents not to put their wheelie bins out the night before waste collection day. Putting wheelie bins out the night before causes a lot of problems and is a challenge to the safety and security of a neighbourhood. A neighbourhood watch warned its local residents of the consequences of leaving wheelie bins outside for long periods of time:<sup>79</sup>

1. Bins put out overnight are often used as ‘ladders’ to scale walls and gain entry to secure properties;
2. Bins put out overnight attract ‘scavengers’ who are often actually covers for opportunist criminals; and
3. Bins left out in the street all day after the refuse removal are often stolen.

The first problem that is highlighted shows how the wheelie bin functions outside its normal purpose of temporarily containing waste. At night the wheelie bin is transformed into a site that disrupts the order of the neighbourhood. According to a post on a community webpage, the physical attributes of the wheelie bin makes access to the property a lot easier <sup>80</sup> and it can become a ‘get away thing’<sup>81</sup> during house break-ins. As a result of this, a different type of agency is ascribed to the wheelie bin, making it an object of regulation.

Not only do the physical attributes of the wheelie bin transform it into crime-related technologies, it also has an attraction power. The second problem related to leaving

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<sup>79</sup> Newsflash 2013/82 posted by rnwmanagement on 2 April 2013. Available: <http://rnw.contextsolutions.co.za/content/?s=trolley> [2015, February 5].

<sup>80</sup> Newsflash 2013/33 posted by rnwmanagement on 20 February 2013. Available: <http://rnw.contextsolutions.co.za/content/?s=wheelie+bin> [2014, March 27].

<sup>81</sup> Interview 1 (2012, October 25).



wheelie bins out at night speaks to *skarelaars*. In this instance, the wheelie bin at night attracts a particular type of *skarelaar* whose identity is questionable.

Another example how the wheelie bin is transformed into a space of surveillance is through its contents. Local residents are encouraged to recycle or take their recyclable materials to drop-offs in the area.

‘There are obviously “rich pickings” in our neighbourhood attracting genuine gleaners, as well as a criminal element. Please try to recycle as much as possible, and take e waste to the dump in Rosmead Avenue or to the centre in Lansdowne Rd. Both are job opportunity projects. SAPS have asked us time and time again NOT to give to the trolley guys. We really urge residents to co-operate in this issue...’<sup>82</sup>

The type of material that *skarelaars* and carties collect also organizes space around the wheelie bin. Scrap metal collection in particular is associated with criminal activities, due to the high incidences of copper theft in the city. A newspaper article reads as follow: ‘the City of Cape Town face a crippling onslaught on its electrical infrastructure and companies such as Telkom and Transnet has lost millions due to the copper cable theft’ (Arendse, 2011). Scrap metal that is placed in or around the wheelie bin also transforms the wheelie bin into a space of surveillance. Carties in particular spoke about scrap metal collection and the negative connotations that are related to the material. One cartie explained that just because he collects scrap metal he is always treated as a ‘*verdagte*’<sup>83</sup>[Afrikaans expression for a suspect]. Another cartie animatedly explained the process of being stopped by the police on a daily basis:

‘...hulle sien jou elke dag in die straat...hulle trek jou elke dag af en dan kyk hulle op die wa... hulle skud sommer vir jou uit kyk of jy nie iets op jou het nie...’ (while patting down another cartie to illustrate his point) [English Translation: They see you in the street

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<sup>82</sup> Newsflash 2013/10 posted by rnwmanagement on 13 January 2013. Available: : <http://rnw.contextsolutions.co.za/content/2013/01/13/newsflash-2013-10/> [2014, April 3].

<sup>83</sup> Interview 1 (2013, June 28).

every day and every day they stop and search your cart then they search you to see if you have anything].<sup>84</sup>

In this regard, the type of transport also plays a key role in organising the space around the wheelie bin. As discussed in Chapter Five, the non-humans, such as trolleys, carts, horses and *bakkies* are key regulators as sites of policing and surveillance in various ways. Because of this particular role or identity that is connoted to it, a presence at wheelie bins also transforms the wheelie bin into a space of surveillance. For example, a neighbourhood watch in one of Cape Town's affluent neighbourhoods made the following announcement after storm water drain channels had gone missing:

'Unfortunately, the metal thieves are back in the RNW area. This week (either on Wednesday night or Thursday morning) a storm water drain channel was ripped up in Cross Rd...Please continue to keep an eye open for perpetrators – any suspicious people with “wheels” – be they with wheelie bins, trolleys, horse and carts...'<sup>85</sup>



**Figure 19: A skarelaar working at a wheelie bin on waste collection day**

<sup>84</sup> Interview 3 (2013, June 28).

<sup>85</sup> Newsflash 2011/063 posted on 9 June 2011 by rnwmanagement. Available: <http://rnw.contextsolutions.co.za/content/2011/06/09/newsflash-2011-063/> [2014, April 3].

The wheelie bin also acts as a site of visibility, where the invisible and stigmatized work of *skarelaars* is made visible. As a result of their activities at wheelie bins, *skarelaars* are made visible in both a positive and a negative way. As some of the above examples show, the visibility is often perceived as negative by local residents, CIDs or the police. However, there are also instances where the activity at the wheelie bin increased their visible.

Finally, the wheelie bin also acts as a space that brings together formal and informal actors. Around the wheelie bin *skarelaars*, local residents, CIDs, neighbourhood watches, and the police are brought together. Sometimes they reach consensus or they oppose one another, leading to continuous resistance and contestation. For example, a number of *skarelaars* explained how they have reached consensus with local residents on waste collection days. A *skarelaar* made the following comment regarding this:

*'Observatory is the 'beste plek om te skarrel...die mense hier is alright...ons moet net nie trouble maak nie'...'hulle vra ons om die dromme uit te neem en sometimes vra hulle ons moet hulle yard skoon maak...'* [Observatory is the best place to rummage... the people here are fine as long as we don't make any trouble...sometimes they ask us to take out the bins and clean their yards].<sup>86</sup>

In other instances, *skarelaars* have managed to negotiate their access to wheelie bins with CIDs, based on an agreement on following rules regarding trolleys on the streets. For example, a *skarelaar* explained that since his trolley had been confiscated he collects recyclables in black bags that become very heavy. While pointing to his materials in the black bags he said he is allowed to collect waste in the area as long as he does not work with a trolley.<sup>87</sup>

Overall, this example demonstrates that the wheelie as a workspace can be considered as a 'regulatory space' that is organised by assemblages of humans and non-humans, i.e. the activity of *skarelaars* and carties, together with the non-humans -

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<sup>86</sup> Interview 2 (2012, October 30).

<sup>87</sup> Interview 1 (2012, October 30).

trolleys, carthorses, and waste material - work together to shape and transform spaces and these activities are in turn shaped and transformed by that space. The next section looks at how a set of rules for carties regulates how the carties interact with their horses.

#### 6.4.2 *The 10 Carthorse Commandments: 'On the streets'*

The 10 Carthorse Commandments (commonly referred to by carties as '*die 10 gebooie*'<sup>88</sup>) is a set of rules created by CHPA in order to regulate the carting industry. This set of rules forms part of the E53 licencing process (as explained in Chapter four) and came into effect in January 2013. It is considered as the law that guides how carties ought to carry out daily activities with their horse. It encompasses a set of rules referred to as commandments that regulate when, where and how equines should be worked. Every cartie is expected to know the commandments and act within the framework of it. If they fail to perform the responsibilities outlined in the commandments there are penalties. Penalties for contravention of the commandments vary depending on the severity of the case and the working history of the owner and driver. It includes verbal and written warnings, confiscation of the harness, horse, rehabilitation and prosecution (CHPA).<sup>89</sup> Table 4 sets out the commandments:

**Table 4: The Ten Carthorse Commandments<sup>90</sup>**

<b>Carthorse Commandment 1</b>	<b>Will not work their horse too fast.</b>
<b>Carthorse Commandment 2</b>	Will not work their horse too hard.
<b>Carthorse Commandment 3</b>	Will not overload.
<b>Carthorse Commandment 4</b>	Will not beat or whip their horse.
<b>Carthorse Commandment 5</b>	Will not be on the road before sunrise and after

<sup>88</sup> Afrikaans expression for the 'The Ten Commandments'.

<sup>89</sup> Available: <http://carthorse.org.za/our-services/patrol-response/> [2014, April 10].

<sup>90</sup> Carthorse Protection Association (n.d.)

	sunset
<b>Carthorse Commandment 6</b>	Will not work too far
<b>Carthorse Commandment 7</b>	Will not work without an ID plate or temporary permit
<b>Carthorse Commandment 8</b>	Will not work without an Operators Permit
<b>Carthorse Commandment 9</b>	Will not be rude to members of the public
<b>Carthorse Commandment 10</b>	Will not use their "lot" to steal or dump

These commandments have a significant impact on the work of carties on the streets. Although it seems as if the commandments are largely focused on the horse, this has implications for scrap metal collection. If horses are confiscated or carties are prosecuted for contravening the rules, then carties cannot collect scrap metal. CHPA acts in a regulatory manner in its operations of regulating the carting industry. In order to make sure carties comply with the commandments, CHPA apply enforcement measures such as roadblocks and patrols. For this reason, the carthorse commandments transform the streets where carties operate daily into a space of surveillance where the actions of carties with their horses are regulated.

Broadly speaking, the carthorse commandments regulate three main issues. The first section of the commandments addresses how carties ought to treat their horses. This includes where, when and how the equine should be worked on the streets and provides that carties should not work their horse too fast, work their horse too hard, overload the cart, nor beat or whip the horse. The first set of rules forms the crux of CHPA regulation, which puts the horse at the forefront. This section has led to serious convictions, such as the confiscation of horses. The following quote is an example of carties who were caught in contravention of the rules:

‘Cart horse Trojan was just seized for working under the condition, with an overload cart, and with harness wounds...how can they not see that this horse shouldn’t be working?!! The drivers were made to pull their own overload cart home....’<sup>91</sup>

This is one example among countless others where horses were confiscated. The confiscation of the horse has serious implications for the work of carties, as taking the horse away also means taking away their income.

As discussed in Chapter Five, horses are regulators that shape how CHPA regulate the activities of carties. Because of this, the horse also shapes how the conduct of carties will be regulated on the streets where most of the work takes place. To ensure that carties operate within the framework of the commandments while carrying out scrap metal collection, the CHPA set up blockades at popular intersections where most carties live and areas that have been identified as ‘problem areas’ where there is a high occurrence of horse abuse and neglect. The CHPA blockades function in the same way as traffic roadblocks with the key purpose to enforce the Ten Cart Commandments. The blockades often occur randomly during the week, but are usually determined by the number of horses that is booked off to rest (CHPA, 2013). There are also instances when the CHPA organise surprise roadblocks over the weekend in order to ensure that carties adhere to the rules on weekends too. The following statement was posted by CHPA:

‘CHPA set up a surprise blockade on Giel Basson road this morning to ensure the horses working over the weekend were in good condition with fitting harnesses, a cart in good working condition, and had their temporary ID’s or plates. Several horses have been booked off work and we also wanted to make sure they were getting their well-deserved rest!! We generally don’t do patrolling over the weekends so this stop came as a huge surprise to the carties who should now be wondering where we’ll be next ...’<sup>92</sup>

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<sup>91</sup> (Carthorse Protection Association, 2014)Facebook Communication: 10 January 2014, 3:22PM.

<sup>92</sup> Carthorse Protection Association (2013). Giel Basson Blockade. Available: <http://carthorse.org.za/2013/01/giel-basson-blockade/> [2014, April 10].

The point being made here relates to how the streets are transformed into a space of surveillance in order to ensure that carties comply with the rules.

The second issue that the commandments regulate is who is allowed to operate a carthorse on the streets. It states that carties will not work without an ID plate or temporary permit and will not work without an Operators Permit. This section is aligned with Chapter four of the City of Cape Town Animal By-law of 2010 that requires permits for keeping working equines (City of Cape Town 2010). The yellow identification plate serves as a permit for operating working equines. It plays an important role in keeping carties accountable and relies on the public to look out for the welfare of the animal. The following quote capture this:

‘You are welcome to contact all SAPS, Metro Police and Law Enforcement departments to report possible dumping, illegal activities and road traffic violations. THE BRIGHT YELLOW NUMBER PLATE AT THE BACK OF THE CART HAS AN ID NUMBER FOR THE HORSE. PLEASE QUOTE THIS NUMBER!’<sup>93</sup>

In addition to regulating their access to an area or the collection of scrap metal, the yellow number plates have not only made carties visible on the streets but also gave them opportunities for more work.

This section of the commandments also makes provision for the rule that drivers are not allowed to operate a cart without a valid operator’s permit (see figure 8 is an example of an operators permit). Carties explained that operator permits are important particularly when they work in Community Improvement Districts. They are not allowed to collect scrap if they are not in possession of a valid operator permit. When they are caught operating without a permit, even though their carts have the yellow bright number plate at the back, they are denied access to the area.

The third section of the carthorse commandments relates to the character of carties. This section includes rules regarding how carties ought to conduct themselves on a cart on the road. It states that carties will not be rude to members of

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<sup>93</sup> Carthorse Protection Association Newsletter (no date).

the public and will not use their 'lot' to steal or dump. Figure 20 is an illustration of a presentation of the commandments in Afrikaans by CPHA with Uitsig carties in January 2013.



**Figure 20: E53 course of Uitsig carthorse drivers**

In addition to the various compliance mechanisms the CHPA employ to ensure that carties comply with its rules, the CPHA also enrolls the help of other actors such as CIDs officers on the streets of Cape Town. CID officers take on the role of the CHPA in the areas where carties are prevalent. The Epping CID in particular plays a key role in regulating carties on the streets of the industrial area. They assist the CHPA by identifying overloaded horse carts, incorrect harnessing and lack of horse shoes and report this to their inspectors (ECID, 2014). In their 2013/2014 annual report Epping CID (ECID) reported 12 incidents related to carthorse checks and complaints and six incidents of carthorses that were searched and removed from the area. While the ECID involvement assists the CHPA in regulating the industry, some carties have reported how frustrating work in the industrial areas have become for them. One cartie said the following with regard to this:



*Die Epping Patrol wat hier is (shaking his head)...jy kan nie gaan park hier met jou perdekar hier by die scrap yard nie...dan wil hulle jou n fine skryf en goete...Jy haal net die scrap van die wa af...of jy sit die kos van die perd neer dan is dit sommer n fine... [English Translation: You can't unload the scrap or put feed down for the horse then the Epping Patrol fines you].<sup>94</sup>*

In summary, the findings in this section indicate that the carthorse commandments organise the streets as a workspace. They transform the streets into a space of surveillance where the actions of carties with the horse and on their cart are regulated. The following section draws on another example to demonstrate how the streets as a workspace are regulated by assemblages of humans and non-humans.

### **6.4.3 *Spreading the Protective Net: 'Use your Eyes and your Ears': On the Streets***

While the Carthorse Commandments directly regulates the carties' interaction with their horses, another approach of CHPA indirectly regulates the work of carties and serves as a compliance mechanism. This approach is referred to as 'spreading the protective net' by appealing to the senses (eyes and ears) of the public. Even though yellow number plates, regular roadblocks, patrols, and compliance with the 'Ten Commandments' is at the heart of CHPA regulation of the cartie on the streets, these are not sufficient because these mechanisms are not all and everywhere seeing. In order to ensure that carties comply with the rules of CHPA wherever they work in the city, the public plays an essential role. A newsletter published by CHPA states the following:

*'...we are appealing to all cart horse-loving people to do "that little extra". We as the CHPA Team are but 10 in number, but with your assistance, we could employ the eyes, ears and voice of numerous Cape Town citizens in keeping a watch over these truly hard working horses and donkeys...'<sup>95</sup>*

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<sup>94</sup> Interview 2 (2013, June 28).

<sup>95</sup> CHPA September Newsletter (no date).

The point being made here is that CHPA does not have the capacity to cover each and every corner in the city. For this reason they enrol the eyes, ears and voices of the public as a way of enforcing the rules pertaining to the horses. One of the ways in which the 'eyes and ears' of the public is enrolled is through the following guidelines:

Carts with no ID plates (use your eyes)

Farriery: Unshod or shoe lost (use your ears)

Poor harnessing: No metal in string etc. is allowed (use your eyes)

Pace: Trotting is allowed, but not galloping (use your ears).<sup>96</sup>

With these guidelines the 'eyes and ears' of the public serve the same function as a speed camera. It is an interesting compliance mechanism that ensures that the carties are always upholding the law of the Ten Commandments in their daily activities. If a member of the public spots or suspects any form of abuse, neglect or overloading they should contact the emergency number on the yellow ID plate, send an email or place a post on the CHPA social network pages. Other details, critical for reporting, that are required include the colour of horse and name or ID number, any distinctive markings on the horse such as a blaze, a star, white socks, how many men are on the cart, what colour t-shirts are the men wearing, 'are they wearing anything distinctive such as hats or beanies, on what road did you see the horse and in which direction was the horse going, what is the closest intersection...'<sup>97</sup>. One of the key ways of capturing all this information is through photographs and members of the public are encouraged to take photographs with their mobile phones and post it on the CHPA Facebook or Twitter page. These photos serve an important purpose in disciplinary hearings and court cases as evidence.

The 'spreading the protective net' approach also transforms the street into a space of surveillance, where the public becomes the 'big brother' and thus where

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<sup>96</sup> CHPA September Newsletter (no date).

<sup>97</sup> <http://carthorse.org.za/contact/report-abuse/> Available: [2014, July 1].

each and every move or interaction of carties with their horses is constantly watched. This approach enables the CHPA to broaden their scope of surveillance. It is also quite a successful approach. In their 2012 annual report it was reported that cases of abuse and neglect had decreased considerably and that it was very seldom that one saw an overloaded cart because members of the public reported these sightings immediately (Carthorse Protection Association Annual Report, 3 July 2012). This approach further exemplifies the notion of the horse as an agent that affects the spaces in which it operates.

In broadening their scope of surveillance through this strategy, the CHPA has made carties visible on the streets of Cape Town. For example, a cartie was caught on the road hitting a horse with an extension cord. The horse was confiscated and its owner was prosecuted (Interview 1, 2013, June 26). While some carties bear the brunt of this type of surveillance, others have also benefited from it.<sup>98</sup> Some carties reported that having a yellow number plate on their cart provided them with extra income opportunities. A number of carties said that local residents asked them to remove garden waste and pay them for their service.

In summary, this section demonstrated that the streets can be considered as a 'regulatory space' that is organised by assemblages of humans and non-humans. These examples show how an institution like the CHPA is able to orchestrate the assemblages of humans and non-humans in order to ensure that carties uphold the Ten Commandments.

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<sup>98</sup> Some of the key ethical and normative issues that are not covered in this thesis includes the abuse and a) mistreatment of working equines; b) given the fact that working equines serves an important role in transportation and labour for those operating in the informal waste economy (see for e.g. Medina, 2007) – how does one balance the needs of the animals and humans especially in the context of the informal waste economy.

Although the thesis do no directly discuss the normative and ethical issues pertaining to the treatment of animals (horses and dogs) who are key agents in the daily lives of carties it does not dismiss nor condone the abuse of animals.

The next section looks at how large-scale recycling companies assemble humans and non-humans as a strategy to gain competitive advantage.

#### 6.4.4 *'Big guys muscling the small guys out': Commercial Premises*

As discussed above *bakkie* brigade operators enter into arrangements with clients at commercial premises to collect recyclable materials. Although these contractual agreements are between operators and clients, they are often contested by large-scale companies who also collect at commercial premises. Large-scale companies contest these arrangements by 'muscling out the small guys'. This involves assembling humans and non-humans in particular ways, assemblages that *bakkie* brigade operators are not able to create.

Large-scale companies have the capacity to deal with large volumes of waste. This is evident in the way they transport and handle waste through large-scale technology and infrastructure. As a result of this, these companies offer various services to commercial clients. One of the large-scale companies that work at the majority of the commercial premises where *bakkie* brigade operators collect recyclables offers services such as on-site sorting and cleaning. A post on their website regarding these services read as follow:

'On-site sorting and cleaning: sorting waste and maximizing recycling is our speciality. Let us manage this for you and save you some money. We will place our staff on site to keep your waste area clean and comply with the latest environmental legislation, while reducing the waste to landfill.'<sup>99</sup>

This quote illustrates that large-scale companies are able to assemble their services and infrastructure in a very particular way. The act of on-site sorting and cleaning is an approach to creating order. In the instance where clients do not make use of on-site sorting and cleaning services, companies provide wheelie bins. A cleaning staff member explained how wheelie bins are used: 'All the bins are placed in this corridor separate from the general waste. They asked us to put up notices above

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<sup>99</sup> <http://www.wasteplan.co.za/commercial-waste-management-recycling> [2014, September 24].

each bin indicating where material should go' (Personal conversation, 24 January 2012). This is another means of containing waste and preventing it from spillage.

In addition to providing bins for recyclables at commercial premises, some large-scale companies also provide other sorts of infrastructure for containing waste. This infrastructure comes in the form of large shipping containers or skips. A *bakkie* brigade operator explained how he lost a collection contract with a local supermarket:

'It was a new Spar, I collected all the waste, but after two weeks, they said no, *Waste Man* is going to collect, because they supply bins and containers, they said we are too small to handle all that...' <sup>100</sup>

Another example of how large-scale companies assemble humans and non-humans is through centralising waste management services. This involves offering collection services and recycling services. As a result of this, large-scale companies become the sole provider of waste management services at commercial premises. A *bakkie* brigade operator explained how he lost a two-year contract at the Waterfront.

'Well I collected waste from the Waterfront, and I had 4 to 6 places/restaurants which I collected from and I have been there for two years and then *Waste Man* came and they took ov'er the removal of waste and they also decided to go into recycling. That is how they stopped me from collecting the recyclables, they didn't come to me personally, and they went to property and management, because they got a contract from Property Management, and they Property and Management came to me to say that I can't enter the premises, its illegal for me to collect on the premises...' <sup>101</sup>

Claiming ownership of the waste is related to the centralisation of waste management services. As soon as a contract is signed between a commercial client and a large company the waste becomes their asset. Any person who then operates within the premises to recycle waste is considered a thief. A manager at a

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<sup>100</sup> Interview 2 (2010, December 2).

<sup>101</sup> Interview 1 (2010, December 2).

commercial premise explained the following, based on the question I asked her about *bakkie* brigade operators operating on their premises:

‘All the waste in the building belong to Waste Man, all the recyclables that come out of the building should be recycled by Waste Man, no one else is allowed to do it. If they see any individuals who are doing recycling in the building they are to report. It is illegal to enter the building without permission from property and services and Waste Man. If they do see anyone then they are to report it to security’ (Personal Conversation, 24 January 2012).

Assembling humans and non-humans at commercial premises through containing waste in a particular way, centralising waste management services and claiming ownership of the waste, large-scale companies contest the existing arrangements of *bakkie* brigade operators with clients. Through these particular assemblages, large-scale companies compete with *bakkie* brigade operators, who are often considered as small operators. Large-scale companies create a particular type of order by setting standards of how waste ought to be handled at commercial premises. Large-scale companies also contest arrangements through assembling specific infrastructure for the storage of waste.

Other examples of how large-scale companies ‘muscle out’ *bakkie* brigade operators are through incentives. Large scale companies have various ways of incentivising commercial clients for recycling. One of the key ways is through monetary incentives that involve paying clients for the recyclables. An industry representative explained to a group of *bakkie* brigade operators how to retain their clients:

‘...be open with the guy and pay him for the volumes that you get from him... differentiate your service don’t just go in there and offer what everyone else is doing go and offer a little extra...’<sup>102</sup>

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<sup>102</sup> Input at workshop (2013, June 12).

Because large-scale companies have the necessary financial capital and physical capital (in the form of infrastructure) they are able to pay clients for recyclable materials. A number of *bakkie* brigade operators are not able to pay clients and offer a free collection service in exchange for getting access to recyclables. One operator explained: 'its like you have to go to Waterfront to collect the stuff, you go there and you come back, you don't get paid for recycling...' (Interview 1, 2 December 2010).

Another way of incentivising clients is through 'waste reduction services'. This entails large-scale companies offering waste audits free of charge, applying formulae to the waste stream in order to reduce the amount of waste sent to landfill sites. One waste collection company made the following comment about the benefits of waste audits for commercial clients:

'For each kilogram of waste that we remove from the waste stream, you will see a double benefit (reduction in landfill cost as well as income from the recycling)...'<sup>103</sup>

In addition to waste audits, large-scale companies also offer sustainable reporting services. This involves measuring waste streams on a daily basis and feeding it into a web-based reporting mechanism.<sup>104</sup> This reporting mechanism allows clients full access through a secure login to keep track of how much materials they have recycled. Waste audits and sustainable reporting are all ways of getting clients involved and creating the perception that they are contributing to green practices that are environmentally sustainable.

Overall, these examples show that large-scale companies organise commercial premises in a particular way. This involves assembling humans and non-humans in such a way that it contests existing arrangements between *bakkie* brigade operators and commercial clients, through offering various services and infrastructure for managing and handling waste.

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<sup>103</sup> Available: <http://www.wasteplan.co.za/commercial-waste-management-recycling> [2014, September 24].

<sup>104</sup> Available: <http://www.wasteplan.co.za/commercial-waste-management-recycling> [2014, September 24].

The next section looks at the backyard as a space of work and how it is organised by a mixture of formal and informal arrangement, as well as human and non-human assemblages.

#### **6.4.5 *'Neighbours and council is all over you': The Backyard of Bakkie Brigade Operators***

A number of *bakkie* brigade operators cannot afford to rent a property for the storage of waste and use their backyards as a temporary storage space. It involves the further separation and storage of waste in black bags or bale bags and enclosed containers such as skips and shipping containers. This activity turns the backyard into a site of regulation where the City of Cape Town regulates how waste ought to be handled and stored. In addition, the views that neighbours and operators hold of waste turn the backyard into a site of contestation.

The Integrated Waste Management By-law of 2009, as explained in Chapter 4 was approved in March 2009, with the aim to regulate and control the management of waste in the city. This by-law introduced a set of minimum requirements for waste storage and infrastructure. Section 12(1) states that any holder of waste who stores or transport waste must ensure that:

- a) the container in which any waste is stored is intact and not corroded or in any other way rendered unfit for the safe storage or transportation of waste if the waste is not in a container provided by the City;
- b) suitable measures are in place to prevent accidental spillage or leakage;
- c) the waste cannot be blown away;
- d) nuisances such as odour, visual impacts and breeding of vectors do not arise;
- e) pollution of the environment and harm to health are prevented;
- f) hazardous waste is sealed in an impervious container and suitable measures are in place to prevent tampering; and



- g) any waste items or substances are safe for handling, collection or disposal and are not harmful to persons or members of the public

The purpose of this section is, first, to provide a set of guidelines for how waste ought to be stored. Section 12(1)(a) clearly outlines the requirements for the type of container in which waste is stored. This section directly impacts the work of *bakkie* brigade operators in the city as they fall within the definition of ‘waste service providers’ under the by-law. A *bakkie* brigade operator explained the following when they started their activities:

‘When you start from home the first thing they ask is it closed?...what about your neighbours?...(referring to another operator) and say that she is now small but what if she gets registered and as soon as she gets over the level...then the health inspectors will ask her about the mice and whatever...’<sup>105</sup>

For those who do not comply with the by-law there are serious consequences. When the by-law has been breached, offenders will be ordered to rectify the situation by a specific date at his or her expense. The by-law makes provision for admission of guilt fines. Serious breaches or repeat offences are dealt with in court and carry severe fines and prison sentences (City of Cape Town, no date). For instance, an operator reported that his neighbours reported him to the City of Cape Town and he was fined R20 000. This operator was devastated and considered giving up his waste activities because he was not able to pay the fine.<sup>106</sup> This is just one example of an operator who did not store the waste appropriately while working from his backyard. Furthermore, the presence of large amounts of uncontained waste creates conflict between operators and their neighbours. One *bakkie* brigade operator made the following comment: ‘Because most of us are working from home and we have a lot of pressure working from home, neighbours, council is all over you...’<sup>107</sup>

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<sup>105</sup> Interview 1 (2013, June 12).

<sup>106</sup> Interview 4 (2010, December 2).

<sup>107</sup> Interview 1 (2010, December, 2).

As the quote suggests, a lot of pressure comes from neighbours and this has mainly to do with how the way waste is 'acting' in the backyard. Figure 21 is an example of waste not being stored appropriately in the backyard of an operator.



**Figure 21: Backyard of a bakkie brigade operator in Belhar, Cape Town**

In the picture it is clear that the waste was not stored appropriately. As a result of it, there was conflict between the operator and the neighbour. The conflict emerged around the way the waste was 'acting' in the backyard of the operator because of its smell and the fact that it could attract rats. While there are instances where waste causes conflict, there are other instances where it benefits the neighbours. For example, an operator was able to resolve the dispute of waste spilling into the backyards of his neighbours by distributing some of the waste to neighbours' backyards and paying them a small fee for storing materials.<sup>108</sup> In other instances, neighbours also play an important role in ensuring the safety of recyclable materials by looking out for shipping containers and reporting any suspicious activities that happen at night.

In summary, these example shows that the backyard is organised by two sets of actors; the City of Cape Town and neighbours. The City of Cape Town regulates

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<sup>108</sup> Interview (2009, September 9).

how waste ought to be handled and stored, while neighbours play the role of ensuring that operators operate within the framework of the City and contest how waste as a material acts in the backyard of the operators. Thus far, this chapter has focused on how workspaces for informal collectors are organised through assemblages of humans and non-humans.

The next section will discuss the implications of these findings for the literature.

## 6.5 Discussion and conclusion

As mentioned in Chapter Two, how spaces are organized for informal collectors is not adequately explored in the literature. By focusing on the experiences of *skarelaars*, carties and *bakkie* brigade operators within the various workspaces in the city, this chapter provides insights for informal waste and informal economy literature. To date, discussions of how spaces are organized in the informal economy are centred on human interactions, while largely ignoring the many non-humans that organize space in the informal economy. The findings in this chapter are significant in at least three respects; the first is that non-humans are active agents in shaping the flow of events and should not be left out of our analysis of informal economic activities. The second is that humans act together with non-humans to organize space. Lastly, and most importantly, this complex interrelation between humans and non-humans is important for how we conceive of spaces in informal economies.

The findings show that workspaces of informal collectors are organised differently based on the following sets of reasons: first it shows that the physical characteristics of the workspace influence how it is organised. As the above findings indicate, the wheelie bin situated within a residential area is not considered as an ideal workspace by residents. As a result of this, *skarelaars* working at wheelie bins are considered as a nuisance, treated with suspicion, or looked down upon. Similarly in the case of carties, working on a carthorse also provokes suspicion. This is

consistent with the work of King (2006) who found that the physical characteristics of street vendor stalls play an important role in organising space

Second, in relation to the physical characteristics of the workspace, the findings show that the geographical location, i.e. where informal collectors carry out their work also plays a role in organising workspace. This was particularly relevant for *skarelaars* and carties who operate in different geographical locations in the city. For instance those who work in Community Improvement Districts experienced a different set of challenges as those operating on the Cape Flats. This finding is consistent with empirical studies on informal waste collection (Ward and Kamsteeg, 2008; Samson, 2009; Benson and Vanqa-Mgijima, 2010). It also resonates with empirical studies on street vending (Skinner, 2000; Hansen, 2002, 2010).

Third, the findings indicate that the type of space where collection is carried out also determines how workspaces are organised for informal collectors. The findings show that workspaces or informal collectors vary from public (wheelie bins in a street) to private spaces (commercial premises). The experiences of *skarelaars* and carties, who largely carry out their work in public spaces, resonate with empirical findings on street vending (Brown, 2006; Skinner, 2008; Hansen, 2010) who highlight the difficulty of working in public spaces.

Lastly, in terms of how spaces are organised differently for informal collectors, the findings indicate that the actors looking after the workspace determine how spaces are organised. This is consistent with empirical studies on informal waste collection (Samson, 2008, 2012). It also resonates with studies in criminology (Stenning and Shearing, 1987; Hentschel, 2010).

The findings indicate that the arrangements between actors also organise workspaces in the following way. First, the findings show that the arrangement between carties and the CHPA organised workspaces in a particular way. This finding is consistent with Samson (2012), who shows how the arrangements between reclaimers on the landfill sites organised space. It also resonates with the work of

Simone (2008, 2010) who argues that informal actors engage in various arrangements throughout the course of one day.

Second, the findings show that the negotiations between actors were often contested by other actors. For instance, large-scale companies organised commercial premises through assembling humans and non-humans in a particular way to contest the arrangements between *bakkie* brigade operators and their existing clients. This is partly consistent with the work of Simone (2010). It differs slightly in that my findings show that negotiations were contested in a very particular way, which involves *how* humans and non-humans were assembled. Although there is some reference in the informal waste literature regarding how negotiations between actors are contested, very little attention is given to how it is contested. The main issue that emerges from this finding is that how negotiations are contested is important.

The findings suggest that non-humans, such as trolleys, scrap metal, carthorses, *bakkies* and so forth were active agents in organising space. This chapter reflected on the following aspects regarding the active nature of non-humans. First, the findings show that non-humans such as wheelie bins, horses, waste material and so forth are active agents. As the above mentioned findings show, wheelie bins, trolleys, skips, carthorses acted in a particular way. The active nature of non-humans is largely overlooked in the informal waste literature. A possible explanation for this is that things are often considered as resources or objects that have no effect (see for e.g. McLean, 2001; Medina, 2007; Gutberlet, 2009). Similarly, in other informal economic studies such as street vending, non-humans are considered as resources, assets or object with no effect (Brown, 2006; Hackenbroch, 2013). Although this finding is largely overlooked in the informal waste and informal economy literature it resonates with the work of political ecologists (see for e.g. Bakker, 2007; Swyngendouw, 2006); ANT scholars (Latour, 1992, 2005); urban planning scholars (Amin, 2013), criminology (Hentschel, 2010; Cloatre and Dingwell, 2013) all of whom recognize the active role of non-humans. The main issue that emerges from this

finding is that non-humans in the informal waste economy actively shape the flow of events.

Second, the findings indicate that waste as a material acted in a particular way in workspaces. For instance, waste acted through the smell and its attraction of rodents and created disorder in the backyards of *bakkie* brigade operators, creating contestation with neighbours and resulting in contravention of the by-law. This finding is in agreement with Whitson (2011) who showed that waste acted to organize social space for *catadores* on the streets of Bogota, and Samson (2012) who found that waste as a commodity shapes social relations. In relation to the active nature of non-humans, the findings also show that non-humans acted in a particular way to organise workspaces. First, the findings show that waste acted to create disorder at workspaces. This was particularly relevant for *bakkie* brigade operators, where the storage of waste in their backyards resulted in conflict with their neighbours. This finding is consistent with Whitson (2011) who argues that waste as a material acts to organise social space. This finding also provides further empirical support to a largely overlooked area in the informal waste literature.

Third, the findings indicate that the type of material collected by *skarelaars* and carties organised workspaces in a particular way. Scrap metal in particular transformed the workspace of *skarelaars* and carties into a space of surveillance. This finding is partly consistent with Whitson (2011) and Samson (2012), who show that waste as a material organises social spaces and relations. However, it differs in that my findings focuses on specific types of material, like scrap metal and how it organises workspaces of informal collectors. This finding has implications for informal waste literature, as the type of material that is collected is vital for understanding how spaces are organised. However, the finding resonates with empirical studies in political ecology that show how particular types of non-humans, such as water, alcohol, food and so forth act in shaping power relations in the city (Gandy, 2004; Bakker, 2007; Bennet, 2007; Lawhon, 2012).

Fourth, the finding shows that the type of transport informal collectors used for collection also organised workspaces. Like scrap metal, other non-humans such as trolleys and carthorses also actively organised workspaces for informal collectors. This finding provides interesting insights for informal waste literature that treat these non-humans as mere forms of transport (Mclean, 2001; Langenhoven and Dyssel, 2007; Medina, 2007).

In addition, the findings indicate that workspaces as an assemblage transformed the meaning of places for informal collectors in the following way: The findings show that the activity of rummaging through a bin transformed it from a temporary place where waste is stored into a space of surveillance in Community Improvement Districts. Similarly, the experiences of *bakkie* brigade operators at commercial premises and their backyards also transformed the meaning of the place. This is consistent with Samson (2012), who found that the activity of reclaiming at landfills transformed the landfill into a place of possibility. It also provides further empirical support to the work of Samson (2012). The findings show that the assemblage of humans - *bakkie* brigade operators, neighbours, staff - and non-humans - waste material - transformed the backyard into a site of value as well as a site of contestation. This finding offers interesting insights for informal waste literature and informal economy literature. It also offers insights for regulation literature. The implication here is that assemblages play an important role in transforming the meaning of places.

In addition the findings show that assemblage of humans - *skarelaars* and carties - and nonhumans - trolleys, carthorses etc. - also turned the workspaces into a space of surveillance. As the findings show, the actions of *skarelaars* with the wheelie bin transformed the meaning of the bin. Similarly, the experiences of carties on streets showed that the actions of carties with the carthorse also transform the streets into a space of surveillance. This finding extends Samson's (2012) notion of how spaces are organized by drawing attention to the role of non-humans in organizing

space. The implication here is that humans act together with non-humans to organize space.

Finally, the findings indicate workspaces for informal collectors were organised by assemblages of humans and non-humans. It also shows that this is an iterative process where assemblages of humans and non-humans organise space and in turn spaces organise assemblages of humans and non-humans. Although this finding shows that spaces are produced by social relations (social, economic, political processes) non-humans were equally important in understanding what enabled or constrained informal waste activities at various spaces. This finding offers interesting insights for informal waste literature and informal economy literature.

In conclusion, the findings in this chapter highlighted how the workspaces of informal waste collectors are organized. This chapter has suggested the following: first, that the non-human should not be ignored. Second, representations of spaces in the informal economy are not merely an outcome of human-centred social relations, but should be seen as an assemblage of humans acting together with non-humans. Understanding how spaces are organized in the informal economy is just an initial step and more empirical work is necessary to further examine how informal economies are regulated by assemblages of humans and non-humans. The next chapter takes this issue further and explores how informal waste collectors mobilize resources through enrolment.



## Chapter Seven: Mobilizing Resources through Enrolment

### 7.1 Introduction

The previous chapter examined how spaces are organized for and in the lives of informal waste collectors. This chapter describes and evaluates the strategies informal collectors employ to (a) secure and access large quantities of good quality materials, (b) improve their working conditions, and (c) to enhance and sustain their income. Consequently, this chapter is guided by a single question: how do waste collectors mobilise resources? This question is important because answers to it will improve our understanding of how resources are mobilised in support networks by drawing attention to the role of non-humans in building alliances.

This chapter employs an enrolment analysis to evaluate the strategies that informal collectors use to achieve these three goals. Enrolment refers to the process of involving another actor (human or non-human) and their capacities and resources to achieve a particular goal. This concept is useful because it allows one to explore the complex interactions between various social actors and non-humans that are used to mobilise resources in the informal economy. Following Black (2002), my analysis is organised around three questions: (a) who is enrolled? (b) what do they enrol? and (c) what strategies do they use to enrol? I use these three questions to analyse the strategic micro-actions that *skarrelaars*, carties and *bakkie* brigade operators employ in order to achieve these three goals.

In this chapter I argue that in order to understand how resources are mobilized in the informal economy it is necessary to pay particular attention to the micro processes of constructing alliances. I also argue that the process of mobilizing resources in informal economies involves both humans and non-humans, and that they act in association with each other to steer the flow of events that influence waste collectors' abilities to access resources. As indicated, my analysis highlights that enrolment is actively constituted by assemblages of humans and non-humans.

Following this introduction, this chapter is divided into four sections. The next section, 7.2 starts off with enrolment and discuss its usefulness for understanding how resources are mobilised in the informal economy. Section 7.3 provides an overview of the actors, their capacities and resources and discusses who and what informal collectors enrol in their daily activities. The following section, 7.4, draws out three strategies of enrolment to demonstrate how informal collectors are able to assemble or build associations of humans and non-humans. In doing so, I discuss how 'messy' the process of enrolment is. I show how it often is contested, contributes to the marginalisation of waste collectors, and sometimes places them in a precarious situation. Following this section, I discuss the implications these findings have for existing literature and conclude the chapter.

## **7.2 Enrolment as a framework for understanding how resources are mobilised**

Enrolment as a concept became prominent in the 1980s with actor-network theory (ANT) scholars Bruno Latour, Michel Callon and John Law. Also referred to as the 'sociology of translation', it is a central tenet of ANT and refers to the notion that, in order to achieve their intended outcomes, entities have to enrol other actors into a program which places the initiating entity as the representative of the whole network, and its objective as representative of the interests of each of the actors (see also Law, 1986).

Following this, the concept has been employed theoretically by Latour (1986), and empirically by Callon (1986) and Law (1986). Since then, the concept has also migrated and has been applied in various ways by regulation scholars who rely on Latour's (1986) definition and employ it to showcase how power works (Bennett, 2000; Braithwaite and Drahos, 2001), and as an analytical device to map regulatory processes (Black, 2002, 2003). In addition, scholars employing a nodal governance framework also adopt the Latour (1986) definition to show how actors govern through enrolment in order to steer the flow of events (Wood and Shearing, 2007; Wood and Mcquire, 2009). Several empirical studies on environmental and waste management conflicts adopt Callon's (1986) notion of enrolment to show how

conflicts can be analysed through networks made up of humans and non-humans (Woods, 1998; Sneddon, 2003; Solli, 2010; Magnani, 2012).

For the purposes of this chapter I draw on Latour's (1986) notion of enrolment as it allows for heterogeneous mapping of humans and non-humans. This is useful as it allows one to explore the complex interactions between various social actors and non-humans in order to understand how the alliances between them shape patterns of resource mobilisation in the informal economy.

### **7.3 Overview of actors, resources and capacities**

Black (2002b, 2003) highlights that actors enrol other actors to achieve their goals. They are thus likely to enrol actors that are well placed to perform certain regulatory functions, which possess key resources, are influential individuals, and so forth. Keeping this in mind, this section provides an overview of the wide range of actors, resources and capacities that informal waste collectors enrol in pursuit of achieving their goals.

#### **7.3.1 Actors**

The informal recycling economy consists of a wide range of actors engaged in a series of transactions of economic and social activities that connects human (formal and informal) and non-human (physical objects) actors to one another. In carrying out their daily activities of collecting, sorting, accumulating volumes, and trading recyclable materials, informal collectors enrol the capacities and resources of these actors to achieve their goals. These actors are enrolled to secure or maintain large quantities of good quality waste, improve working conditions, and to sustain waste collectors' income. My research showed that in pursuit of these goals, the following categories of actors are enrolled (also see Table 5 that categorize the wide range of actors informal collectors draw upon in their daily activities):

Formal actors: individuals, organizations and companies with whom informal collectors have formal agreements to deliver a collection service.

This category includes managers at restaurants and supermarkets, property and services offices of local universities, and non-profit organizations.

Informal actors: actors that are not registered but with whom informal waste collectors have a personal tie or an informal agreement. This category includes actors like '*shebeen*' and '*spaza*' shop owners, family members, friends or peers, neighbours, and other individuals from the community.

Non-human actors: physical objects that informal waste collectors employ in their daily activities. For the purposes of this chapter, these physical objects are considered to be participants in the daily activities of informal waste collectors that have the capacity to steer the flow of events. This category includes the shopping trolley, carthorse, dogs and the *bakkie*.

**Table 5: The type of actors enrolled by informal waste collectors**

Type of informal collector	Informal actor	Formal actor	Non-human actor
<i>Skarelaar</i>	Family, friends, neighbours Local informal entrepreneurs - <i>shebeen</i> and <i>spaza</i> shop owners		Shopping trolley
<b>Carties</b>	Family, friends, neighbours, individuals from community	Non-profit organization	Carthorse, dogs
<b>Bakkie brigade operators</b>	Individuals, <i>skarelaars</i> and carties	Clients - managers of restaurants, office buildings, supermarkets,	<i>Bakkie</i>

		property and services officials.	
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Each of these actors outlined in Table 5 has the potential or the actual capacity to shape the flow of events for informal waste collectors. In other words, these actors possess key resources for achieving the goals of accumulating volumes, collecting good quality recyclable materials, improving working conditions, and sustaining an income. The following section demonstrates the different capacities and resources these actors possess and their relevance in performing daily informal waste activities.

### 7.3.2 *Capacities and Resources of Actors*

Black (2003) defines regulatory capacity as the actual or potential possession of resources, and the actual or potential conditions that make it likely that those resources might be deployed in the present or in the future to further identified goals or to resolve identified problems. In this chapter the term refers to the actual or potential possession of resources (human and non-human) and the actual or potential conditions that allow for those resources to be deployed to secure opportunities or resolve problems facing waste collectors. The resources of formal actors include physical infrastructure, their ability to function as gatekeepers, organizational capacity, information, and support. The resources of informal actors are labour capacity, entrepreneurial space, and large quantities of recyclable materials. Other resources that are enrolled in the daily work of informal waste collectors are trolleys, carthorses, dogs, and *bakkies*. Informal actors might possess resources directly or indirectly, or sometimes they themselves might act as a resource for someone else. Table 6 illustrates the different capacities actors have.

**Table 6: The type of resources actors possess**

Type of collector	Actor enrolled	Resource	Goal
<i>Skarelaar</i>	Friends, family, peers	Labour capacity	Accumulating volumes
	<i>Shebeens, shisa nyama</i> , <sup>109</sup> <i>spaza</i> shop owners	Consumers, entrepreneurial space,	Accumulate volumes
	Shopping trolley	Transport	Mobile sorting and separation
<b>Carties</b>	Friends	Speak the language, gatekeeper	Safety and security
	Carthorse Protection Association	Expertise, organizational capacity, authority, regulators, advisors,	Maintain horse
	Carthorse	Transport	Accumulate volumes
	Dog	Protect goods	Accumulate volumes; safety and security
<b>Bakkie brigade</b>	<i>Skarelaars</i> and	Labour capacity	Accumulate

<sup>109</sup> An eatery in townships that provides township favoured food, particularly barbecued meat. *Nyama* means meat in Xhosa and Zulu, and *shisa* means to barbeque the meat.

operator	carties		volumes
	Clients	Authority, legitimacy, gatekeepers, information	Resolving problems
	<i>Bakkie</i>	Transport	Good quality materials

In order to carry out the daily activities, informal waste collectors enrol both humans and non-humans and the relationship between the two is critical for achieving their goals. Table 6 provides an overview of the different humans and non-humans involved in waste collectors' enrolment processes and their capacities. It shows that different humans and non-humans are relevant for the performance of informal waste activities. It is apparent from this table that *skarelaars*, carties, and *bakkie* brigade operators enrol different actors depending on the nature of their activities, the goal they want to achieve, or the problem they want to resolve.

Family members, peers, and friends have some valuable resources that are deployed in the accumulation of volumes for *skarelaars* and carties. This category of actor directly possesses labour capacity, which is a resource for accumulating volumes. A number of *skarelaars* who collect waste in township areas reported that family members played a key role in accumulating their volumes of recyclable materials. In addition, family or friends were also a resource for *skarelaars* (see Figure 22 as an example of *skarelaars* working in groups). For example, *skarelaars* who worked on the streets in affluent areas reported that working in pairs was beneficial as it allowed for faster and effective rummaging through wheelie bins. Additionally, it enabled them to cover a large area. A *skarelaar* made the following comment about working in pairs:

‘If you are two, than going through the bins goes faster. It’s also easy because then you can push the trolley at the back and the other person can pull the trolley in the front ...’<sup>110</sup>



**Figure 22: Skarelaars working in pairs**

In addition to labour capacity, friends also enhanced the security of carties. As explained in Chapter six, the work of carties is often associated with theft. For this reason, carties have to take extra care when working in areas such as Langa as there are many instances where other carties have stolen their waste. As a result of this, their safety, and their control over the waste they collect, is not guaranteed. A cartie who worked in Langa enrolled a local individual to assist him on the cart because the person was familiar with the area and could speak Xhosa. This made it easier for the cartie to move around and engage local residents when buying materials.<sup>111</sup> In order to ensure the safety of the materials on the cart, carties enrolled non-humans, such as dogs, who acted independently and watched the cart - hence acting as a resource.

<sup>110</sup> Personal Conversation (2009 November 8).

<sup>111</sup> (Tania Raised Us, 2004)



In addition to family members, friends or peers, *skarelaars* also enrolled *shebeen* and *spaza* shop owners. These informal entrepreneurs possess resources, such as an entrepreneurial space that produces large volumes of valuable recyclable material, such as glass and cardboard. *Shebeen* owners in particular are enrolled because they are the largest users of glass in townships – particularly on weekends. *Shebeens* offer a perfect space for collecting large volumes of glass as these are social spaces where people gather on the weekend to drink and socialize. In addition to being a key resource for glass collection, *shebeens* and *spaza* shops are also strategically located. These places are in close proximity to where *skarelaars* live in townships as compared to the more distant suburbs that *skarelaars* have to travel to in order to collect waste.

With permission from *shebeen* owners, some *skarelaars* were also able to place their bins on *shebeen* premises over weekends – thereby enrolling the physical space of the *shebeen* for the purposes of accumulating volumes. A *skarelaar* in Samora Machel township explained that the *shebeens* in their area allow them to put their bins on their premises on weekends and that this was an important resource for accumulating volumes of glass instead of picking up glass at the *shebeens* throughout the weekend.<sup>112</sup> Those *skarelaars* who are not able to put bins at *shebeens* on weekends also enrol the space by negotiating access to it: with the permission of *shebeen* owners they can collect waste, on condition that they don't disturb the customers. This gives them easy access to the *shebeen* and the waste that is produced there, and diminishes the likelihood of them being harassed or attacked for working on these premises.

On the other hand, *skarelaars* who work on the streets in affluent areas enrol local residents who possess direct and indirect resources for the work of rummaging through bins that are located in these areas. Local residents also often acted as a resource for *skarelaars* on the streets by making the work of collection easier for informal waste collectors. For instance, local residents separated the recyclable waste from the general household waste. This saved a lot of time for *skarelaars* during

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<sup>112</sup> Interview (2011, April 21).

collection as they no longer had to sort through the wheelie bins. Another way in which local residents are a resource for *skarelaars* is when they keep recyclable materials like paper and cardboard in a dry place for collection during winter. One *skarelaar* who works in Observatory explained that during winter it is very hard to get good quality materials and the fact that some local residents make an effort to keep it dry is very important.<sup>113</sup>

In addition to being a resource for the work of *skarelaars* on the streets, local residents also occupy a strategic position – living in the area gives them authority. Authority of local residents is quite important for the work of *skarelaars* in affluent neighbourhoods because it is through them that *skarelaars* can sustain their access to the area. In other instances, *skarelaars* also do odd jobs for local residents.

While *skarelaars* often rely on personal ties as a resource, carties rely on their professional ties with Carthorse Protection Association (CHPA) as a key resource in their daily work. The CHPA possess organizational capacity, expertise, authority and legitimacy, which makes working with horses easier, but can also make it difficult if carties do not adhere to the CHPA's rules. The CHPA plays an important role in the work lives of carties, as they have expertise on one of the key aspects of working in the scrap metal industry: maintaining the horse that is used to transport this material. The scope of its authority and legitimacy extend to different areas of working with a horse.

Clients at commercial premises possess key resources for the work of *bakkie* brigade operators. These include authority and legitimacy, physical infrastructure, strategic position, gatekeepers for accumulating large volumes of key resources, ensuring good quality recyclable materials, resolving problems and identifying opportunities. Clients occupy a strategic position, as they have the ability to set standards for how waste ought to be sorted and separated. For instance, a *bakkie* brigade operator explained that his clients implemented a separation-at-source

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<sup>113</sup> Interview 3 (2012, October 30).

system, providing a number of bins to improve the quality of waste by sorting and separating it appropriately. Figure 23 is an example of a separation-at-source bin system:



**Figure 23: Separate bin system on commercial premises**

The separation-at-source system is critical for achieving the goal of good quality recyclable materials. *Bakkie* brigade operators reported that the storage of recyclable material is important as it impacts their income. It also allows for the indirect accumulation of volumes, as this type of system raises awareness and encourages recycling at commercial premises. This is important for accumulating volumes. The separation-at source-system also makes the collection process easier as materials are already sorted according to type and category.

Furthermore, clients act as gatekeepers at commercial premises for *bakkie* brigade operators. Clients possess the ability to control how waste management service providers act on their premises. As explained in Chapter six, large-scale collection companies often out-muscle smaller collectors, like *bakkie* brigade operators. For this reason, keeping an eye on recyclable materials in the absence of operators is important for accumulating volumes. For example, a *bakkie* brigade

operator explained that one of his clients told a large collection company the following: ‘This X stuff you can’t take it ....’<sup>114</sup>

Labelling wheelie bins (as seen in Figure 23) and providing separate spaces is another example of how clients act as gatekeepers who control access to operators’ recyclable materials. This is quite important as *bakkie* brigade operators often experience competition from large-scale collectors.

In addition to enrolling clients at commercial premises, *bakkie* brigade operators also enrol other actors such as *skarelaars* and carties. They possess key resources - such as the expertise and knowledge of how to sort and separate recyclable materials. This is important for ensuring the quality of recyclable materials. These actors are mobile and have the means to collect materials from areas which *bakkie* brigade operators are unable to access. *Skarelaars* and carties also act as a resource for *bakkie* brigade operators in the sense that they rely on them to achieve their goal of accumulating large volumes.

Finally, informal waste collectors also enroll non-humans such as trolleys, carthorses, dogs and *bakkies* in their daily activities. These non-humans act as a resource because they are important for the transportation of recyclable materials, temporary storage of waste materials, and function as mobile sorting sites. The trolley is a resource for *skarelaars* as it allows for mobile sorting of recyclable materials. *Skarelaars* also rely on them because they play an important role in accumulating volumes and covering large geographical areas.

Carthorses are an important resource for scrap metal collection in the city as they facilitate the collection process by allowing collectors to cover large geographical locations, which is important for the accumulation of volumes. Similar to trolleys and carthorses, *bakkies* are also enrolled because they are active participants in the work of operators. Unlike the trolley and cart, the *bakkie* facilitates a particular type of access at commercial premises that trolleys and carts are not able

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<sup>114</sup>Interview 1 (2010, December 2).

to achieve. The bakkie has a 'formal character' because it is a motorised form of transport, whereas the cart and trolley is associated with the 'informal' because they are not considered appropriate as waste management infrastructure, which is generally big and highly mechanized.

In addition to enrolling trolleys, carthorses and *bakkies*, informal waste collectors also enrolled other non-humans. For example, carties also enrolled non-humans such as dogs to act as an intermediary. Dogs play a very important role in watching the carts at scrapyards. A cartie explained that the dog keeps an eye on his scrap at the scrap yard.<sup>115</sup> Enrolling non-humans such as dogs play a very important role in ensuring the safety of recyclable materials on carts. Dogs act independently and interdependently with the cart to keep the scrap metal safe (see Fig 24 as an example of a dog working on a cart before going to a scrap yard).



**Figure 24: Dog on the cart**

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<sup>115</sup> Interview 5 (2013 June 28 June).

*Bakkies*, on the other hand, also act as a resource for operators as they rely on it for accumulating volumes, improving working conditions, and access to business opportunities.

In summary, depending on the nature of their activities and where they operate, informal collectors enrol different actors that possess the necessary capacities and resources to help achieve their goals.

So far this chapter has established who and what informal waste collectors enrol in order to achieve their goals. It has also described the capacities and resources of the actors that are enrolled. The following section will discuss the techniques that informal waste collectors use to enrol human and non-human actors. Like trolleys, the cart and the horse are enrolled because they are active participants in scrap metal collection. The cart and horse are enrolled by carties without negotiation and/or discussion of what these represent for informal scrap collection. Enrolling the carthorse empowers the cartie to move around the city accessing various sources of waste. It is also critical in the collection and transportation of waste. In addition, the carthorse is also a representation of family history and heritage for carties. Carties adopt a certain pride that they pass on from generation to generation.

#### **7.4 Enrolment strategies: Empirical Examples**

In the following pages, I outline three strategies of how waste collectors enrolled humans and non-humans. I focus on the specific ways in which these strategies align humans and non-humans around a goal: secure access to waste, sustain quantity of materials, maintain the quality of materials, and to improve working conditions and sustain an income. I also discuss how these techniques of enrolment were contested, marginalized informal waste collectors, and placed them in precarious situations. The strategies include techniques such as collaborating with actors in various forms in order to secure opportunities, and sustain activities or resolve conflicts. Another technique employed by waste collectors was the configuration of personal and

professional relations, the various ways in which relationships are assembled personally and professionally to achieve a goal. Finally, the '*koop in*'<sup>116</sup> system is an example of how informal waste collectors enrolled the capacity of other actors through incentives. All these examples share one common thread: mobilising resources is a messy process that involves constant building, severing and resisting alliances between humans and non-humans.

#### 7.4.1 *Collaboration*

One of key strategies of enrolment for waste collectors was collaboration. Informal collectors collaborated with various actors who possess actual or potential resources in order to achieve their goals. It occurred through building partnerships with other actors that ranged from person-to-person to collective arrangements. Depending on the nature of the goal, waste collectors engaged in some partnerships that were once off strategic partnerships while others took place over a longer period of time. The type of partnerships was determined by a) capacities and resources an actor possessed; b) whether waste collectors wanted to resolve a conflict or secure an opportunity; c) the location in which waste collectors operated; and d) the non-humans necessary for achieving the goal.

In order to achieve the goal of accumulating volumes, building long-term partnerships was important. *Skarelaars* enrolled family and friends to assist them in achieving their goal of accumulating large volumes of waste. Carties often enrolled friends strategically. Working in areas such as Khayelitsha, Gugulethu and Langa can be quite challenging. There are many instances where carties are attacked or robbed by local residents in these areas. A cartie who works in Khayelitsha had the following experience: 'The guys had picked up a fridge for scrap; a couple of residents of Khayelitsha decided they wanted the fridge too, so they tried to steal it off the cart and confronted *Bal*,<sup>117</sup> the driver, and his companions...'<sup>118</sup> Because of

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<sup>116</sup> Afrikaans for 'buy in' system.

<sup>117</sup> The name of the equine.

<sup>118</sup> "Another day at the office": The CHPA mobile clinic at Boland scrap yard – and tracking down a fleeing horse in Khayelitsha posted on Friday, 29 June 2012. Available:

such instances, carties enrol friends who live in these areas to accompany them during collection. One cartie explained why working with someone from the area is important:

*'Ek werk elke dag in die Langa. Maar ons kom baie dinge oor in die Langa. Ek was al geslat al ... gat in die kop. My hande was net so dik geslat. Die ander scrap ouens se dinge ... hulle steel die mense se goete. Daarom ry ek ider saam met 'n native in die Langa ... want hulle weet die natives hulle sal nie mekaar se goete vat nie ... daarom ry ek maar elke dag saam met hom ... maar as ek alleen is dan ry ek nie in die Langa nie ...'* [English Translation: We work in Langa every day. But a lot of things happen to us in Langa. I've been beaten. I had a hole in my head. My hands were heavily swollen. This was because of other scrap guys who steal people's stuff. That's why I ride through Langa with a native, because they know: the natives won't take each other's stuff. So I rather ride with him. But when I am alone, I don't ride in Langa.]<sup>119</sup>

In this regard, this quote explains the importance of locals during scrap metal collection in some areas of Cape Town. The term 'native' is particularly interesting as it captures the fact that the local partner understands the language and understands the community. This strategy is very important in order to ensure the safety and security of carties while working on the streets.

*Skarelaars* working in affluent neighbourhoods also engaged in strategic partnerships with local residents. Local residents occupy a strategic position and their influence is extensive in affluent areas because they have the ability to enable or constrain informal waste collection in their neighbourhoods. A number of *skarelaars* reported that establishing a personal relationship with local residents is important for their work. *Skarelaars* also reported that being friendly and offering to take out wheelie bins on waste collection days was important in establishing relations with local residents. In addition, *skarelaars* also highlighted that the way they conduct themselves while rummaging through wheelie bins is also important. If they

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<http://namibsands.wordpress.com/2012/06/29/another-day-at-the-office-the-chpa-mobile-clinic-at-boland-scrap-yard-and-tracking-down-a-fleeing-horse-in-khayelitsha/> [2014, May 13].

<sup>119</sup> Ganief Ely in Tania Raised Us (2004)



conduct themselves in a manner that does not disrupt the order of the neighbourhood, local residents are more likely to look out for them, separate waste, give them odd jobs and sometimes even give them food. Being on good terms with local residents is very important for *skarelaars* as they are able to draw on them when they are challenged by CID officers, neighbourhood watches or the local police.

In addition to enrolling local residents as intermediaries, *skarelaars* who work in the city centre were also able to enroll their clients as intermediaries in order to gain access to other commercial premises for recyclable materials. *Skarelaars* reported that one of the ways they were able to expand their client base was through the recommendation of their clients. A *skarelaar* explained that he secured a collection contract through his client for collecting recyclables from another client on a weekly basis because his existing client recommended him. He also explained that using the coloured wheelie bin of his client allowed for access to new opportunities at the museum and the theatre who allowed him to come in and pick up recyclables in their ally.<sup>120</sup> This explains how enrolling assemblages of humans and non-humans acted as intermediaries who spoke or acted in a particular way providing *skarelaars* with access to new opportunities.

While *skarelaars* and carties relied on a mixture of formal and informal arrangements in their partnerships, *bakkie* brigade operators largely relied on partnerships with their clients. Collaboration with clients usually occurred if *bakkie* brigade operators faced challenges at commercial premises. These partnerships spanned over a short period of time until a solution had been reached. Clients were enrolled because they occupied a strategic position and had influence to steer the flow of events. Box 7.1 is an example of enrolling a client in order to resolve a problem:

**Box 7.1: James working at the Waterfront<sup>121</sup>**

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<sup>120</sup> Personal Conversation (2014, May 21).

<sup>121</sup> Interview 2 (2010, December 2).

James is a *bakkie* brigade operator who lives in Bishop Lavis and operates from home. He has been collecting recyclable materials from six restaurants at the Waterfront. He explained that he has been collecting recyclables from the restaurants without interruption for the past two years until Waste Man was awarded a contract by property management services of the Waterfront. He said that he was not informed that there would be an opportunity to collect recyclables on a larger scale. One morning he went to the Waterfront to collect recyclables from his client and he learned that he was no longer allowed to collect recyclable materials because he did not have permission to do so. He was also informed that if he entered the property without permission he would be arrested. James left feeling very upset and contacted his clients who were also surprised by the new arrangement. His clients contacted property management and informed them about James and how they preferred to give their recyclables to him. On the basis of this the manager of property management services contacted James and asked him to write a letter which he would take to his superiors and that he would do his best to give James access again.

As Box 7.1 shows the strategic position of the client is an example of where clients had extensive influence at the shopping complex. As a result of this, James was able to present his case to property management and services.

While collaborating on various levels translated into tangible benefits for waste collectors, it also resulted in challenges. Short-term collaboration often left waste collectors in a precarious situation. In the case of James, his letter was the only thing that represented him and relying on property management services to get him access did not succeed. In the end James was allowed to continue collection at his client but property management services did not want him on the premises. James was told to park his *bakkie* outside the perimeter of the Waterfront and walk into the area to collect the recyclable materials. He made the following comment regarding this:

‘I was told that if the owners of the restaurant want to give me the bottles, they must take it to a point outside the Waterfront, which they won’t be able to do. So that means that I can’t get the recyclables. That’s why I stopped, because they said to me you know if I come there into the Waterfront again with my vehicle, they will get me arrested and that is how I stayed away from the Waterfront.’<sup>122</sup>

Although, drawing on intermediaries played an important role in achieving their goals or resolving problems, enrolling intermediaries were often contested and placed informal collectors in a precarious situation. For example, the enrolment of clients as intermediaries by *skarelaars* was contested by other actors. A *skarelaar* explained that he was no longer allowed to work at the commercial premises of his client. The following quote captured this: ‘the owner of that place (referring to physical premises) decided that we can’t work from there...they don’t want this people...he got his customers to think of...So he asked X (referring to his client) what you are trying to do...Are you trying to bring the neighbourhood down?’<sup>123</sup> This quote explains how this particular *skarelaar* was not allowed on the premises because of the way he looked and how he handled and transported the waste. This is one example of many others where *skarelaars* lost collection contracts although intermediaries tried to represent their interests. Even though *skarelaars* enrolled intermediaries to gain access to waste, neither they nor the intermediaries could control other actors and the *skarelaars* were not able to secure work - thus leaving them in a precarious situation.

#### 7.4.2 *Configuration of personal and professional relations*

The next strategy of enrolment is the configuration of personal and professional relations in order to achieve a goal. This involves assembling through conscious effort various types of relations including person-to-person exchanges, formal and informal arrangements, human and non-human assemblages, and collective arrangements in order to achieve a goal.

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<sup>122</sup> Interview 2 (2010, December 2).

<sup>123</sup> Personal Conversation (2014, May 21).

In order to accumulate volumes, *skarelaars* who mainly work in township areas collected glass from the local *shebeens*. This involved establishing a common interest with these local entrepreneurs. In order to establish common ground, *skarelaars* approach *shebeen* owners in their surrounding area. *Skarelaars* used the material (glass) and how it acts during busy times in the *shebeen* as an entry point to establish common ground. Glass is used in large quantities on weekends in *shebeens*. These places can get very full and very often there is not sufficient amount of staff to clear away the empty glass bottles from the tables. Empty glass bottles standing around can be a hazard, because there is a lot of movement and dancing in the space, meaning potential for injury. In other instances, the empty glass bottles become weapons in altercations. Using this as an entry point, some *skarelaars* in Samora Machel, Philippi were able to negotiate with *shebeen* owners to put their 'drums' there on weekends in exchange for keeping the premises clean on weekends.<sup>124</sup> In another instance, at a *shisa nyama* called Mzoli's, I observed that *skarelaars* enter the premises during closing hours. When I asked one of the staff members where they come from, he replied that they live in the community and come to collect the glass, which is good because cleaning up becomes easier. He also added that the collectors are only allowed to come during closing hours as long as they don't disturb the 'last round' of customers.<sup>125</sup> Establishing a common ground through the material as an actor makes the accumulation of volumes easier for *skarelaars*. Collecting at one place or having bins at a *shebeen* allow *skarelaars* to accumulate large volumes without it being too labour intensive.

While *skarelaars* in township areas enrol local entrepreneurs, those operating in the city centre enrol restaurants and office buildings. However, they are not able to directly approach these places. In situations like this, *skarelaars* strategically approach individuals that are able to negotiate access for them. For example, two homeless *skarelaars* approached the manager of a local shelter proposing the benefits of collecting glass at a local bar. The shelter manager saw this as an opportunity for

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<sup>124</sup> Interview (2011, April 21).

<sup>125</sup> Field visit (2010, October 23).

social upliftment of the homeless and agreed to arrange a meeting with the local bar owner. The shelter manager and *skarelaars* attended the meeting and convinced the local bar owner to allow for the collection of glass at his premises. The bar owner agreed that the *skarelaars* were allowed to collect the glass, however they had to provide their own wheelie bins and collect the glass every Monday morning before the waste collection truck arrived.<sup>126</sup> Enrolling the shelter manager and his strategic position in the community gave the *skarelaars* legitimacy to engage a formal actor. This strategy of enrolment was quite effective for *skarelaars* and allowed for the consistent access to waste which resulted in an improved income for them.

Carties also enrolled assemblages of humans and non-humans through dialogues that take place in the context of meetings. The Carthorse Protection Association (CHPA) hosts regular meetings for cart horse owners where they discuss common problems faced by carties and solutions for improving working relations. During these meetings, carties are able to collectively raise issues that pertain to their work. This type of engagement differs from the person-to-person exchanges used by *skarelaars* in that carties raise issues that are relevant for all of them. Raising issues as a collective carries more weight as this leads to possible improved working conditions. For instance, carties experience a lot of challenges on the streets in terms of their safety. Because they raised this in the meeting as a collective they were able to 'rent a cop',<sup>127</sup> which plays an important role in improving working conditions on the streets.<sup>128</sup>

*Bakkie* brigade operators also enrol their clients through configuring professional relations in meetings. These meetings differed from the ones that carties had with the CHPA, as these were not information-gathering sessions but rather used as a mechanism to air grievances and discuss opportunities to improve the quantity and quality of waste. For example, a *bakkie* brigade operator noticed that the

<sup>126</sup> Personal Conversation (2010, October 25).

<sup>127</sup> 'Rent a cop' is a pilot project run in Cape Town and Epping and involves City Improvement Districts (CID) and other organisations to hire full trained municipal patrol officers (MPO) to patrol districts (Mashele, 2009).

<sup>128</sup> Meeting Notes (15 March 2013). Available: <http://carthorse.org.za/2013/03/cart-horse-owners-drivers-meeting-2013/> [2014, May 13].

amount of waste he usually collected at a commercial premise was decreasing and the recyclables were contaminated. He contacted the client and raised his concerns; a meeting was organized with the relevant actors to resolve the problem. This meeting had a number of favourable outcomes for the operator because the client agreed to do the following:

Raising awareness among users of the building about the significance of recycling, the necessity to keep paper dry ... ensuring that each office has a Sappi bin used exclusively for paper ... <sup>129</sup>

The quote also illustrates that a meeting as a device of enrolment also allowed for enrolling assemblages of humans and non-humans. Raising awareness about the significance of recycling and the importance of keeping recyclable materials dry, as well as providing non-humans such as bins, play an important role in improving the quantity and quality of waste. The meetings were an important space for deliberating key issues and collectively coming up with solutions.

Although the configuration of relations translated into tangible benefits for waste collectors it also resulted in challenges. Some of the key challenges of configuring personal and professional relations for waste collectors are as follow:

First, in the case of *skarelaars* enrolling *shebeen* owners and the *shebeen* space on weekends, glass as a material was transformed from being waste to a valuable commodity. Engaging with *shebeen* owners created an awareness of the value of glass resulting in some *skarelaars* not gaining the same access as before, while in other instances a decrease in the amount of glass collected was observed. One *skarelaar* collecting glass in Victoria Mxenge made the following remark: 'like nowadays some of the *shebeens* are even keeping their stuff and selling it themselves...' <sup>130</sup>

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<sup>129</sup> Meeting Notes (4 June 2010).

<sup>130</sup> Personal Conversation (15 November 2011).

The same issue emerged at commercial premises with *bakkie* brigade operators. The effort made by clients to put infrastructure in place for the separation of waste also made the value of waste apparent to the cleaning staff. Most of the *bakkie* brigade operators reported that after a few collections at commercial premises they started noticing a decrease in the amount of recyclable materials.

Second, the configuration of relations translated into a challenge because it excluded important actors that play a key role in the management of waste at commercial premises. Focusing only on the client and not taking into account the people who actually sort the waste into its categories created a challenge. At commercial premises, cleaning staff play an important role in the process of securing good quality and large quantities of recyclable materials. For example, at office buildings, cleaning staff ensures that paper is separated into its appropriate categories during cleaning. The top-down instruction from the clients did not always lead to cleaners sorting appropriately.

Depending on the situation that they are in or the goal that they want to achieve, waste collectors configured personal and professional relations in particular ways. The following section demonstrates how informal waste collectors were able to enrol assemblages of humans and non-humans through various forms of collaboration.

#### **7.4.3 Incentive structures: 'Koop-In System'**

Finally, waste collectors also enrolled the capacities of other actors through an incentive structure such as the *koop-in* [Afrikaans expression for buy-in] system. It is an informal, small-scale, unregistered operation where *bakkie* brigade operators and carties buy recyclable waste materials from *skarelaars* and other carties. It has the same basic activities and tasks as the formal large-scale buy-back centres. The main activities of the *koop-in* system includes tasks such as the receiving, weighing, sorting and packing of recyclable materials. This involves receiving recyclable materials where operators would receive the bags from *skarelaars* and check what is in the bag

in order to make sure that the material is not contaminated or mixed with other types of materials. This is an important process because a number of *bakkie* brigade operators reported that there are instances where *skarelaars* put stones in the bags so that it increases the weight of the bag. For example, if the *koop-in* system only collects paper, the operator will open the black or blue bags to make sure that the contents are only paper (see Figure 25 as an example). Once this process is completed, the recyclable materials are ready to be weighed on a hanging scale (see Figure 26 as an example). The weight of materials are recorded in a book during the weighing process and later added up. This involves the following calculation: material weighed (in kg) x price (per kg) = amount of money that will be paid out.



**Figure 25: Skarelaar checking bag before weighing recyclable materials**





**Figure 26: Skarelaar and bakkie brigade operator weighing plastic on a hang scale**

The pricing structure for *koop-ins* is not all the same. This is where it differs from bigger buy-back centres where the prices of recyclables are set by recycling companies (Langenhoven and Dyssel, 2007; Viljoen, Schenck and Blaauw, 2012). In some instances, prices for recyclables will be less than what buy-back centres in industrial areas offer. *Skarelaars* would not contest the prices because they are able to exchange very little material (sometimes three bottles at a time) and they do not have to travel the distance to buy-back centre, which is often located in an industrial area many kilometres from where they live. Other times the prices are determined by the number of *koop-ins* in the area in order to increase customers. For example, a cartie who operates a *koop-in* from his backyard explained that in order to encourage other carties to sell to him, he offers a comparative rate or sometimes even higher than what buy-back centres offer. He then made the following comment in Afrikaans: ‘*Ek lok die ouens na my toe...deur vir hulle die meeste te betaal*’ [I attract them to me because I pay the most].<sup>131</sup> This particular cartie had a growing client base because he offered more than the other *koop-ins* in the area.

<sup>131</sup> Interview 3 (2013, June 28).

*Koop-ins* also differs from the formal large-scale buy-back centres on the basis of how they regulate the transactions. As explained earlier, particularly in the scrap metal industry, carties are required to produce identification documents when they sell metal at buy-back centres. At *koop-ins*, particularly the ones operated by carties, the main rule is that they do not purchase stolen goods. One of the ways in which carties have ensured that their fellow colleagues do not sell stolen goods is through being selective about the types of metal they purchase and only accepting ferrous metals that have rusted. One cartie explained that being selective about the type of material and the condition of the material is one of the ways that he ensures that he buys 'honest scrap'.<sup>132</sup> Those who do not buy-in scrap metal have a different set of rules. These rules pertain to quality of material and quantity of the materials. For instance, *koop-ins* that specialise in paper do not buy loose pages but require an amount of paper that is enough to fill a 20 litre black or blue plastic bag. Another rule is that wet paper or cardboard is not accepted. Once the *skarelaar* arrives with his bags he is required to open the bag while the *bakkie* brigade operator carefully inspects the contents of the bag and the quality of the paper (as seen in Figure 25). In comparison to the *bakkie* brigade operator who specialise in paper, the *bakkie* brigade operator who specialise in glass also buys in smaller amounts. *Skarelaars* are paid per glass bottle. For example, on a field visit to a *koop-in* system in Belhar I observed how a *skarelaar* came to sell a plastic bag with six bottles. She was paid a total of R10.00. Upon receiving the money she looked at me and said: '*net genoeg om brood op die tafel te sit*' [Afrikaans expression: just enough to put bread on the table]. When she left, the *bakkie* brigade operator informed me that if she had gone to Parow Industria to a large buy-back facility, she would not be able to sell the six bottles because large buy-back centres require large amounts of glass.<sup>133</sup>

Additionally, unlike buy-back centres that operate during business hours only, *koop-ins* operate seven days a week with some operating until 10 p.m. Flexible operating hours are important for *skarelaars* and carties, as this enables them to

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<sup>132</sup> Ibid.

<sup>133</sup> Interview (2009, September 9).

control their working hours. This means that they can start working at midday, avoiding the early morning rush when a lot of *skarelaars* are collecting waste. This was particularly relevant in the case of *skarelaars* who worked in areas on the Cape Flats. The flexible hours also worked well for carties who collected waste until late afternoon and were not able to make it on time to the buy-back centres in Epping. For example, a cartie made the following comment about the value of flexible operating hours of *koop-ins* in his area for his work:

*'...nou hoef ek nie meer met my scrap huis toe te gaan en te wag vir die volgende dag nie ...ek kry darem weer iets vir die dag om brood en kers op die tafel te sit [now I don't have to go home with the scrap in the evening and wait until the following day ...] [I am able to make something for the day and return home with bread and a candle for the table].'*<sup>134</sup>

The *koop-in* system played an important role in achieving the goal of accumulating large volumes of waste. It translated into tangible benefits in the following way: first, and most importantly, enrolling *skarelaars* in the process of accumulating volumes, *bakkie* brigade operators were able to supplement their collection at commercial premises that improved their income. *Skarelaars* collect waste in various areas across the city, which give *bakkie* brigade operators access to large amounts of the recyclable materials to which they would otherwise not have access.

Secondly, the accumulation of large volumes through *koop-ins* allowed waste collectors to cut out the middlemen. For instance, instead of selling materials to large-scale buy-back centres, some of the collectors accumulated enough volumes thereby being able to deal directly with big recycling companies. Working directly with big recycling companies has important implications for the work of *bakkie* brigade operators. One operator reported that the *koop-in* he operates from his backyard has allowed him to sell his glass directly to Consol, a large glass manufacturing and recycling company. With this came the benefit of getting skips

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<sup>134</sup> Interview 1 (2010, October 23).

from the company, which translates into collecting more glass and cutting down on transport costs, as the company collects the skips.<sup>135</sup> Additionally, the direct engagement with big recycling companies also creates the opportunity for *bakkie* brigade operators to negotiate better prices. Enrolling *skarelaars* in their process of accumulating volumes was critical.

While, the *koop-in* system translated into tangible benefits for *bakkie* brigade operators and some carties it also came with some challenges. The challenges of the *koop-in* system had to do with the non-humans. This was particularly the case for some of the carties who specialised in scrap metal. As mentioned in Chapter six, scrap metals are a contested material and those who collected it often found themselves in a precarious situation. Irrespective of the whether carties and *bakkie* brigade operators had gone through lengths to ensure that they were buying ‘honest scrap’, large amounts of scrap metal attracts the police and other local law enforcement agencies. The following quote explains this:

‘Scrap is a tricky business ... as you always have the police on your doorstep ... you know sometimes people steal other people’s stuff ... and when the police or the owner comes to your house to fetch their stuff you have to give it back and then you lose that money....’<sup>136</sup>

This quote also suggests that *bakkie* brigade operators have no control over the types of material that is accumulated through the *koop-in* system. Although *bakkie* brigade operators put various measures in place to regulate the types of materials they purchase from *skarelaars* and carties it is difficult to track where materials actually come from.

Another challenge of the *koop-in* system is the location from where it is operated. Large-scale buy-back centres are operated from industrial areas and have gone through an extensive process of licencing in order to keep waste on its premises. The *koop-in* on the other hand, is operated from the backyards of waste

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<sup>135</sup> Interview 2 (2010, December 2).

<sup>136</sup> Interview 3 (2010, October 23).

collectors. This has a particular implication for the operations of the *koop-in* system, namely storing large amounts of waste in their backyards translates into conflict between waste collectors and their neighbours. The conflict occurs on two levels; the first level of conflict is at a personal level. For example, one *skarelaar* who works in Khayelitsha explained that his neighbours reported him to the City of Cape Town because they are jealous of his endeavours.

The second level of conflict emerges around waste as material. Neighbours often report waste collectors to the City of Cape Town because the waste smells bad and it attract rodents and maggots. One collector explained that her operation in her backyard was shut down because one of the neighbours reported her activity to the City of Cape Town saying that the amount of waste in her backyard was dangerous for the children and it attracted rats. She also explained that she tried her best to store the waste in such a manner that it would not be harmful to her neighbours. However, she was banned because of the health issues involved.

In summary, the *koop-in* system is one of strategies that *bakkie* brigade operators and some carties use in order to accumulate large volumes and good quality materials. This system, although operating informally, is very similar to how large buy-back centres operate.

## 7.5 Discussion and Conclusion

Chapter Two highlighted that the notion of how resources are mobilized in informal economies is well explored. However, these mainly focus on the social assemblages and its role in improving livelihoods. Focusing on the experiences of *skarelaars*, carties and *bakkie* brigade operators and the micro-strategic actions they employ to mobilise resources, this chapter provides insights for informal waste, informal economy, and regulation literature. To date, the discussion of how resources are mobilised in the informal economy is largely focused on social relations between humans and have neglected the role of non-humans in building alliances. The findings in this chapter are significant in at least two respects: first,

employing an enrolment analysis sheds light on how the process of mobilising resources involves the constant assembling of humans and non-humans. Secondly, enrolment offers a set of analytical tools for understanding how humans and non-humans are assembled in alliances in ways that improve the working conditions of waste collectors.

The findings show that informal waste collectors enrolled a variety of actors in order to achieve their goals. This chapter reflected on four issues regarding who informal waste collectors enrol in order to achieve their goals. First, the research I conducted indicates that the nature of informal waste activities determines who informal waste collectors will enrol. As the findings show, *skarelaars* and carties who operate on a micro-level enrolled family members, friends, and peers to achieve their goal of accumulating volumes. This corroborates the findings of Roberts (1994), Dercon (2002) and Lindell (2002), who suggest that family and friendship networks play an important role in shaping outcomes in informal economies. Carties and *bakkie* brigade operators, operating on a small scale, enrolled formal actors that included non-profit organizations and clients. This resonates with Beall's (1995) and Adama's (2012) empirical findings, which discuss the arrangements informal collectors, have with formal actors in order to obtain recyclables.

Second, in relation to the nature of activities, the findings show that informal waste collectors enrolled others in the service of their goals. For example, *bakkie* brigade operators enrolled their clients at commercial premises to resolve a problem around the quantity and quality of recyclable materials. Similarly *skarelaars* and carties enrolled friends, family and peers in order to accumulate volumes. This finding seems to be consistent with other research in regulation literature, which found that actors enrol others in service of their goals (Bennett, 2000; Black, 2003, 2008).

Third, the findings suggest that how and where informal waste collection is carried out determines who will be enrolled. For instance, *skarelaars* who operated in

affluent neighbourhoods enrolled local residents, those operating in townships enrolled *shebeen* owners, and *bakkie* brigade operators enrolled clients at commercial premises. This finding is consistent with the findings of Sneddon (2003), Goedeke and Rikoon (2008), and Magnani (2012), which show that the site of enrolment determines the actors who will be enrolled. It also resonates with the work of regulation scholar, Black (2002, 2003).

Lastly, the research shows that non-human actors were also enrolled in the daily activities of informal waste collectors. Informal waste collectors enrolled shopping trolleys, carhorses and *bakkies* to assist them in achieving their goals. These non-humans actively participated in the accumulation of volumes. This is consistent with studies that have used ANT to investigate local environmental conflicts (Woods, 1998; Sneddon, 2003; Solli, 2010) and waste management conflicts (Magnani, 2012). However, considering non-humans as actors in the analysis of how resources are mobilized or enrolled is largely neglected in regulation literature (Drahoš and Braithwaite, 2001; Black, 2002, 2003), nodal governance literature (Shearing and Wood, 2003; Burris et al., 2005) and informal economy literature (Lourenco-Lindell, 2002; Meagher, 2010). Although these theoretical frameworks have the merit of pointing out various variables that combine to explain how resources are mobilized, all of them neglect the role non-humans play in shaping the flow of events. The implication here is that actors are not limited to humans only, but also include non-humans.

The findings suggest that actors were enrolled on the basis of their capacities and resources that they possess and that these were contingent on the context in which waste was being collected, and on the type of waste being collected. This finding is consistent with Black (2002, 2003) who found that actors enrolled others because of the capacities and resources they possess. It also resonates with the work of Lourenco-Lindell (2001, 2002) who found that people in the informal economy construct networks of support in order to access resources.

Second, the findings show that the capacities and resources were assemblages of humans of non-humans. Informal waste collectors enrolled assemblages of humans and non-humans in order to achieve their goals. For example, *bakkie* brigade operators enrolled the strategic position of clients, who provided the non-humans for ensuring good quality and large quantities of waste. This is consistent with empirical findings in studies on local environmental conflicts (Woods, 1998; Sneddon, 2003; Solli, 2010) and waste management conflicts (Magnani, 2012). It also resonates with other research on technology studies (Allen, 2004; Verbeek, 2005). However, the enrolment of assemblages of humans and non-humans is overlooked in informal economy literature (Lourenco-Lindell, 2002; Lyons and Snoxell, 2005; Meagher, 2005) and regulation literature (Braithwaite and Drahos, 2001; Black, 2002, 2003). The implication here is humans and non-humans act together as a capacity and a resource.

The findings indicate that waste collectors employed different strategies to mobilise resources. Two key issues emerge from this finding: first that waste collectors were involved in constantly negotiating, resisting, and building alliances with formal and informal actors. This finding resonates with Cleaver's (2002, 2007) notion of *bricolage* – where informal actors are involved in piecing together various social relations through conscious action or institutional arrangements from existing norms, practices and relationships. The finding also resonates with Lourenco-Lindell's (2002) notion of the politics of support mobilization – where people combine various kinds of relations and ties, drawn from a variety of social settings, in order to sustain their consumption and diversify livelihoods. However, the findings in this study differ slightly in that it shows that waste collectors were not only involved in combining social relations or piecing together institutional arrangements, but were also involved in a conscious effort of combining humans and non-humans, while building alliances to achieve their goals.

This brings one to the second issue that emerges from the findings about the strategies of enrolment. The findings suggest that waste collectors were constantly



involved in assembling hybrid collectives. In the first instance, waste collectors were consciously assembling hybrid arrangements of formal and informal actors for improving their livelihoods. This finding is consistent with the latest debate about hybridity and livelihoods in the informal economies literature (Cleaver, Franks, Maganga and Hall, 2013; Meagher and Lindell, 2013) but differs slightly in that it shows the nature of hybridity on a local level. The findings provide empirical support to this category of studies. The findings also resonate with studies in peace and security studies on hybrid orders (Boege et al., 2008; Boege et al., 2009; Albrecht, 2014) and informal institutions and hybrid governance arrangements (Altrock, 2012; Kreibich, 2012; Meagher, 2012). While the notion of hybrid governance arrangements sheds light on the complexity and variety of actors that regulate the informal economy, it needs to consider the role of non-humans in its analysis of hybrid arrangements.

In addition to assembling hybrid arrangements of formal and informal actors, the findings suggests that waste collectors were also involved in assembling hybrid collectives of humans and non-humans in order to achieve their goals. This study confirms Latour's (2004) consideration of how humans and non-humans operate as a complex connection. It is also consistent with empirical studies on local environmental conflicts (Solli, 2010), socio-technical arrangements (Callon, 2004), and hybrid geography (Whatmore, 1997). However, the notion of hybrid collectives of humans and non-humans is largely overlooked in the informal economy literature because the literature largely focuses on the social relations of humans. The implication here is that hybrid collectives of humans and non-humans organise support networks in the informal economy.

Finally, the findings suggest how the enrolment of various actors and non-humans translated and transformed how waste collectors achieved their goals. The findings in this study show how the enrolment of various actors and non-humans translated into tangible benefits, while in other instances also translated into challenges for waste collectors. This finding confirms ANT scholars' consideration of

translation and its role in networks (Callon, 1987; Latour, 1987). It is consistent with empirical findings in socio-legal studies (Foster, 2014). This finding has implications for informal economy literature, as it largely focus on power relations and how it affects those operating in social networks (Beall, 1997b; Lourenco-Lindell, 2002; Meagher, 2010a, b). The implication here is that there is a need to move beyond the focus of the outcomes of power relations and how this shapes social networks in the informal economy to focus on how social relations translated and how this redefines how informal actors mobilise resources. The study also has implications for regulation studies (Black, 2002b; Braithwaite and Drahos, 2001; Cloatre and Dingwell, 2013), which is also largely concerned with how power works.

The focus on translation processes in networks also brings the attention to the distribution of agency in support networks. The findings in this study show that agency was distributed amongst waste collectors and the non-humans they enrolled to achieve their goals. This finding has implications for the informal economy literature because agency is often situated with the human actor in the network. The implication here is that agency is was not situated within the human actor but emerged through the constant negotiations and building of alliances between humans and non-humans.

To conclude, the findings in this chapter have highlighted that the process of mobilising resources in the informal economy involves heterogeneous associations of humans and non-humans. This chapter has suggested the following: first, informal collectors rely on a variety of assemblages of humans and non-humans in order to achieve their goals. Second, how resources are mobilised is determined by the type of collective (capacities and resources) necessary to achieve a goal. Third, different strategies are employed in order to assemble humans and non-humans. Finally, through the enrolment of various actors and non-humans the goals of waste collectors were transformed.

## **Chapter Eight – Conclusion: Towards a Heterogeneous Understanding of Regulation in Informal Economies**

### **8.1 Introduction**

There are multiple modes of regulation in the informal economy that structure, organise and regulate how people relate to each other. These modes of regulation are enacted by various actors, associations, arrangements, institutions and rules that go beyond the purview of the state (Lindell, 2010b). They are heterogeneous and are shaped by economic, social and political processes that spread across the formal and informal; national and international divides.

Despite the heterogeneous factors that shape these modes of regulation, the literature on the urban informal economy focuses mainly on human actors and their role in shaping and organising social relations. In doing so, the role of the non-human in shaping social relations in the urban informal economy is often overlooked. This thesis set out to address this gap in the literature on regulation in the urban informal economy by focusing on the following central question: how are informal activities regulated? In order to answer this central question, the following sub-questions have been framed around the role of the non-human in regulating the urban informal economy activities:

- What is the role of non-humans in informal waste activities?
- How do non-humans organise workspaces?
- How do non-humans enable or constrain the support networks of informal waste collectors?

In order to unpack this central question the thesis's analysis was built on an emerging body of literature concerned with regulation in the urban informal economy that was outlined in Chapter Two. Mindful of this evolving body of scholarship and its various ideas of how social relations are regulated, the aim was not to provide a definitive picture, but rather a starting point for elaborating how

social relations are regulated in the informal economy. It did so by focusing on four perspectives that provided a useful overview of the various norms, rules, institutions, and governance arrangements that regulate the urban informal economy. These were social capital, informal institutions, social networks and hybrid governance arrangements. From this discussion it became apparent that the role of non-humans as actors in organising social relations in the urban informal economy is largely overlooked. Excluding the non-human from the analysis of how urban informal activities are regulated is problematic because a) it assumes that humans are the only actors that regulate, i.e. grasping social relations as an exclusive human- to- human exchange; b) it does not provide a comprehensive account of social order in the urban informal economy because it silences the narrations of other actors such as non-humans. In light of this, non-humans are critical for understanding how urban informal activities are regulated because it allows for expanding our ideas of how social relations are constituted and how humans and non-humans connect to each other.

In order to contribute to the current understanding of how informal activities are regulated, this study employed a case study method utilising a grounded theory approach. This methodological approach enabled the thesis to draw theoretical conclusions relevant to ongoing debates concerning the urban informal economy and how it is regulated. It also allowed for theory to emerge in an iterative process that emphasized the interaction between theory and empirical research. In addition, it enabled the thesis to map the heterogeneous world of humans and non-humans that regulated informal waste activities on a daily basis. Lastly, this methodological approach also enabled the thesis to provide empirical support to a few empirical studies (see for e.g. Dovey, 2012; McFarlane, 2011a; Simone, 2011) on the role of human and non-human assemblages and how it regulates social relations in the urban informal economy. In doing so, it makes a new and innovative contribution to the informal economy literature.

The empirical analysis in Chapter Four demonstrated that the informal waste activities in Cape Town are regulated by state and non-state forms of regulation. This chapter revealed that the City of Cape Town had one of the most effective and innovative waste management systems in South Africa. The waste management system is regulated by by-laws and policies that are in line with the national waste management legislation and policies. These waste by-laws set the standards for how waste ought to be handled, transported, stored and they outline the requirements for accreditation (in the case of *bakkie* brigade operators). It also outlines the requirements for waste minimisation in the city. As Chapter four shows, these by-laws and policies affect informal waste collectors differently. The category of informal waste collectors who were directly affected by these waste by-laws and policies is the *bakkie* brigade operators. Other informal waste collectors, such as the *skarelaars* and carties are indirectly affected by these forms of regulation. Non-state forms of regulation included formal and informal rules, norms and institutions. In the case of formal rules, non-profit organisations regulated when, where and how informal waste activities took place on the streets. This was particularly relevant in the case of carties. Commercial clients often set rules and standards for how *bakkie* brigade operators conducted their activities on commercial premises. The other non-state forms of regulation are informal rules, norms and arrangements that also guided when, where and how informal waste collectors carried out their work. In addition to these forms of regulation, this chapter also highlighted non-humans, such as trolleys, carthorses, *bakkies* and storage facilities that regulated informal waste activities in the city. These non-humans regulated when, where and how informal waste activities can be carried out, it regulated the spaces where informal waste activities were carried out and how informal waste collectors interacted with other actors.

The subsequent chapters illustrated how informal activities are regulated in the city. Drawing on Actor Network Theory's notion of non-humans as actors these chapters revealed that assemblages of humans and non-humans play a key role in

the regulation of informal waste activities in the following ways. First the findings revealed that non-humans were not mere objects, resources of equipment that are necessary to carry out informal waste activities but are active participants in the daily activities of informal waste collectors. When it comes to non-humans as regulators, the findings show how trolleys, carthorses, *bakkies*, storage facilities and waste material were key actors that regulated when, where and how informal waste work could be carried out in the city. Indeed, while many authors writing on the urban informal economy argue that it is regulated by multiple actors, they are largely concerned with the role of humans in regulating social relations.

Second, the findings revealed that non-humans played a key role in organising the spaces where informal waste workers carried out their work. This is quite interesting as the findings reveal that in addition to the various social relations (state/non-state, formal/informal) that organised the workspaces of informal waste collectors, the non-humans were also prominent in organising workspaces. While, some authors recognise the non-humans in spaces where informal work is carried out they do not consider its active role in organising spaces in the urban informal economy.

Third, the findings revealed that the process of mobilising resources in support networks involved heterogeneous associations of humans and non-humans. This is significant, as mobilising resources in the urban informal economy literature is usually associated with drawing on familial, kinship, or professional ties in order to achieve specific goals. While this offers a useful resource for understanding how people deal with challenges it privileges the fact that people are assembling various human social relations in pursuit of their goals, and ignores that they are also assembling humans and non-humans in very particular ways that enable them to achieve their goals.

Based on this, the main argument that underpins this study is that informal activities are regulated by assemblages of humans and non-humans. This thesis

suggests that in order to understand regulation in urban informal economies it is critical to consider non-humans as regulators; to pay attention to how these organise spaces, and to analyse their role in mobilising support networks.

With this in mind, the purpose of this final chapter is to draw the findings together and reflect on their significance for relevant literature. The next section draws out the key issues that emerge from the research findings. The following section reflects on the significance of the findings and how it contributes to the current understanding of how informal activities are regulated. Following this, the next section discusses suggestions for further work.

## 8.2 Main findings

Drawing from the findings and analysis in the earlier chapters, there are six key issues that emerge from the findings that shed light on how informal waste activities are regulated.

### *Non-humans are actors*

The findings revealed that non-humans such as trolleys, carthorses, *bakkies*, storage facilities, and waste materials were not mere objects, resources or equipment to carry out informal waste work. Rather they are active participants in the daily activities of informal waste collectors in the city. Throughout the substantive chapters it becomes apparent that these non-humans act in various ways. Firstly they played the role of mediators in two ways: one, they shape the events that happen around them. Two, they mediate how informal waste collectors interact with other actors. In the first instance, the findings show that the presence of trolleys, carthorses and *bakkies* on the streets in certain neighbourhoods in the city became objects of surveillance which consequently makes the informal waste collectors also subjects of surveillance. In the latter instance, it shapes the ways in which informal waste collectors are treated as potential criminals by local residents, community improvement districts, local neighbourhood watches and so forth.

Second, non-humans also acted as facilitators in the daily activities of informal waste collectors. Here the findings reveal that the non-humans facilitated how informal waste collectors carried out their work i.e. how they sorted and separated recyclable materials. It also facilitated their access to spaces in the city while in other instances created barriers to access. Non-humans also facilitated how informal waste collectors mobilised resources and determined who they enrolled and how enrolment would take place.

Third, the findings suggest that trolleys, carthorses and *bakkies* as forms of transport changed the way in which waste is valued. Here, the findings reveal that these forms of transport helped to transform waste material from something that is considered as dirty or filthy into a valuable commodity.

Lastly, the finding suggests that non-humans act in such a way that makes the work of informal waste collectors visible in the city. Here the findings reveal that working at wheelie bins or on the streets made informal waste activities visible to the general public. Working with trolleys and carts also make informal waste collectors visible in ways that criminalise them rather than valuing the work that they do.

#### *Non-humans have agency*

The findings suggest that non-humans in the urban informal economy in fact have agency. The substantive chapters portray how trolleys, carthorses, *bakkies*, storage facilities and waste materials exerted agency through the roles that was delegated to them by informal waste collectors and these collectors interacted with these non-humans. One of the ways in which they do this is through making an active difference in the daily activities of informal waste collectors. Although trolleys, carthorses, *bakkies* and storage facilities cannot actively take part in the institutional decision-making processes, or verbally express how they ought to be used for informal waste activities or actively resist power in the same way as humans do, they are tied up in various ways in the daily activities of informal waste



collectors. In Chapter Five it was demonstrated that these non-humans were closely tied up with how their work is regulated. The findings in this chapter reveal that these non-humans are key actors that actively enabled or constrained informal waste activities in the following way: first it shows that the physical attributes of trolleys, carthorses, *bakkies* and storage facilities enabled informal waste collectors to perform a range of activities with waste material which had a direct impact on their income. Second, while these non-humans had a positive impact it also negatively impacted the work of informal waste collectors because of the social stigma that was associated with it. Here the findings show that the social stigma was only associated with trolleys and carthorses and this determined how informal waste collectors were regulated on the streets. This finding is significant as it highlights that the type of non-human, where it operates and whether it is mechanised played a key role in determining how informal waste collectors were treated by local residents, community improvement districts, local neighbourhood watches and so forth. For example, in the case of wheelie bins, *skarelaars* in particular were stigmatised because of their activity at the wheelie bin and the contents of the wheelie bin. Local residents often disapproved of the activity of *skarelaars* at the wheelie bins and their interaction with what is considered to be waste that is thrown away.

Chapter Six also shows how trolleys, carthorses, *bakkies*, storage facilities and waste material, in association with the activities of rummaging, sorting, separating and transporting, organised the spaces in which informal waste collectors operated. Here the findings reveal how non-humans in association with human activities regulated informal waste activities in various spaces across Cape Town in the following ways; first it shows that non-humans were often the central point around which various actors (formal and informal) connected in spaces. Second it also highlighted that the agency of non-humans in spaces in Cape Town were not the same. For instance, the findings show that the type of non-human that was used for waste activities also determines where informal waste work takes place and which spaces they have access to. Third, the findings show that certain non-humans like

trolleys and carthorses that operate mainly in public areas transformed these spaces into spaces of surveillance.

In Chapter Seven these non-humans form part of the heterogeneous associations that informal waste collectors assemble in order to mobilise resources in their daily activities. In this chapter the findings reveal the agency of non-humans in mobilising networks in the following ways: first it highlights how the non-humans that were enrolled made a difference in how informal waste collectors collaborated, configured personal and professional ties, and assembled incentives schemes in order to achieve a goal. Second, the enrolment of non-humans in the networks of informal waste collectors often shifted the flow of events for informal waste collectors. In this instance, the findings show that enrolling non-humans did not always translate into tangible benefits but also resulted in challenges that were sometimes detrimental for informal waste collectors. Therefore the findings suggest that agency of non-humans were relational and produced in collaboration with the humans.

*Workspaces are organised by assemblages of humans and non-humans*

The findings suggest that the various spaces in the city where informal waste activities were carried out were organised by assemblages of humans and non-humans. Here the findings reveal that the workspaces of informal waste collectors were actively formed by the interactions between formal/informal and humans/non-humans. In the case of formal/informal arrangements and the production of space, the substantive chapters show that it was produced or constituted by an assemblage of actors, rules, and institutions that spread across the formal-informal divide. The findings also revealed that the interactions between formal/informal actors and arrangements differed across space and time. For instance, the formal/informal assemblage differed depending on who, where and how activities were carried out. These spaces were often dynamic and subject to change depending on who regulates, what is regulated and how it is regulated.

Second, the findings suggest that the workspaces in the urban informal economy are produced by how humans and non-humans interact. The findings in Chapter five and six reveal that the workspaces of informal waste collectors were produced by how informal waste collectors acted with waste material, trolleys, carthorses, *bakkies* and storage facilities. For instance, Chapter five shows that informal collectors together with these non-humans produce and constitute spaces in that they delegate particular waste management roles to non-humans, contest, regulate, and actively shape the identities of those using it. The findings in this chapter also show that these mixes of humans and non-humans produced heterogeneous spaces that differed across the different categories of informal waste collectors. These spaces were also temporal and were influenced by where the activity is carried out in the city - on the streets, commercial premises or the backyard of a *bakkie* brigade operator. Although the assemblages of humans or non-humans were often the same across the different categories of informal collectors, it does not always produce or constitute the same space. In Chapter six the findings reveal that the workspaces of informal waste collectors produce and constitute space in that they assemble humans and non-humans in a very particular way; transform spaces into spaces of surveillance; contesting arrangements between actors; rules and institutions that couple and de-couple humans and non-humans in very particular ways. The findings in this chapter show that spaces were temporal and determined by how humans and non-humans were assembled. The nature of spaces was also not the same across the different categories of informal waste collectors.

#### *Support networks are heterogeneous*

The findings suggest that the support networks that informal waste collectors mobilised for resources were heterogeneous. Here the findings reveal that the actors in the support networks of informal waste collectors were not limited to humans but also included non-human actors. Chapter Seven revealed that informal waste collectors enrolled humans and non-humans in order to achieve their goals. This chapter shows that in order to achieve their goals it was important for informal

waste collectors to enrol non-humans such as storage facilities, transport and so forth. These non-humans formed an integral part of how informal waste collectors were able to achieve their goals.

In addition, the findings in this chapter revealed that the heterogeneous nature of networks was not only determined by the actors who were involved but also the types of associations of humans and non-humans that were assembled. Associations of humans and non-humans were not fixed and often changed depending on the outcome of enrolment or if the conditions for deploying resources were not favourable.

### *Assembling hybrid collectives*

The findings suggest that waste collectors were involved in a constant process of assembling humans and non-humans in their daily activities. Here the findings reveal that informal waste collectors were assembling hybrid collectives in the following ways: firstly, one of the key ways in which informal waste collectors were able to assemble hybrid collectives is through the process of enrolment. In Chapter Seven it is evident that informal waste collectors were involved in the constant process of building heterogeneous networks through enrolling various humans and non-humans in their daily activities. In this chapter the findings reveal that humans and non-humans were assembled in ways that were often beneficial while also detrimental to the work informal waste collectors.

Secondly, the findings reveal that informal collectors also assembled hybrid collectives through enrolling actors beyond the formal-informal divide. Chapter Seven revealed that informal waste collectors enrolled the capacities of formal actors through configuring personal and professional ties, collaborating across the formal/informal divide and creating incentive schemes. Here the findings reveal how actors were strategically enrolled in order to improve livelihoods and working conditions, achieve goals, access opportunities or deal with challenges.

### *Hybrid Modes of Regulation*

The findings suggest that informal waste activities are regulated by hybrid modes of regulation that include a complex mix of humans and non-humans. Here the findings reveal that informal waste activities are regulated by hybrid modes of regulation in the following ways; first, throughout the substantive chapters it is evident that formal/informal arrangements regulated informal waste activities. The findings reveal that informal waste activities were regulated by multiple actors that included formal and informal actors. Consequently, informal waste activities were regulated by a complex mix of rules, norms and arrangements that often straddled the formal/informal divide.

Second, throughout the substantive chapters it was evident how informal waste activities were enabled or constrained by human/non-human assemblages. These human/non-human assemblages regulated when, where and how informal waste work could be carried out. Chapters Five and Six demonstrates how the work with trolleys, carthorses, *bakkies*, storage facilities and waste materials regulated when, where and how informal waste activities could be carried out. From the substantive chapters it also becomes apparent how these human/non-human assemblages often disrupted the spaces where informal waste activities were carried out. Lastly, the findings throughout the substantive chapters also reveal how these human/non-human assemblages also regulated how the informal waste collectors interacted with other actors. For this reason, regulation in the informal economy is a hybrid that includes a complex mix of human and non-humans that enable or constrain informal activities.

## **8.2 Main Contributions of the Study**

### *Contribution to urban informal waste economy literature*

This study contributes to the informal waste literature by extending existing ideas of how informal waste activities are regulated. Specifically by adopting a grounded theory approach this study contributes to informal waste literature in the following ways; first the methodology itself allows one to study the phenomenon of

informal waste activities in the city without pre-given assumptions of who regulates these activities; what is regulated and how it is regulated. This is important because it allowed one to study the regulation of informal waste activities in the context of Cape Town without assuming that the local municipality is the main regulator of informal waste activities in the city.

Second, adopting this specific methodology allowed for observing how different actors (human and non-human) interacted in the various spaces where informal waste activities were carried out in the city. It also allowed for directly observing how these actors (both human and non-human) enabled or constrained informal waste activities in the city. This is important because not only did it allow for providing a comprehensive account of the actors (both human/ non-human as well as formal/informal) that regulate informal waste activities but it also allowed for the depiction of how heterogeneous the assemblages are that regulate informal waste activities. From this, we learn that both humans and non-humans regulate informal waste activities and due to the nature of their work with waste material, informal waste collectors are intricately connected with non-humans on a daily basis. For this reason, the non-humans cannot be ignored.

In addition, including the non-human as a key actor (in Latourian terms) in the analysis of how informal waste activities are regulated sheds light on the following aspects; firstly, the findings show that non-humans such as trolleys, carthorses, *bakkies* and storage facilities were more than just mere resources in carrying out waste activities but were active participants. It actively participated through the actions that were delegated to it by the informal waste collectors. It also actively shaped the spaces in which it operated as well as the identities of informal waste collectors. This finding is in line with the work of Whitson (2011) about the role of waste material in shaping social relations of the street waste collectors in Brazil, but differs in that it follows the work of Latour (2005) which considers non-humans as actors and includes other non-humans, such as transport and storage facilities, that are otherwise considered as resources.

Secondly, including the non-human as an actor in the analysis of how informal waste activities are regulated also has implications for how we view the activity of rummaging through bins. Samson (2012) in her study of waste pickers on a landfill in Soweto, Johannesburg argues that the activity of reclaiming can be seen as a socio-spatial process - that is shaped by the meaning and nature of places where it is performed. Similarly, in this study the activity of rummaging through bins or *skarreling* in the case of *skarelaars* and carties, also shaped the meaning and nature of the workspaces of informal waste collectors on the streets and elsewhere in the city. However, the findings in this study revealed that the activity of rummaging through bins is a socio-material process - the assembling of humans and non-humans by delegating or assigning roles to it. This finding is significant because it suggests that the activity of rummaging through bins can be viewed as a socio-material process where informal waste collectors are involved in the constant process of assembling humans and non-humans in their daily activities.

Additionally, if rummaging through bins can be considered as a socio-material process it has implications for how space and place is viewed in the urban informal waste literature. Existing literature on informal waste economy argues that space and place is actively produced by the social relations - practices and institutions of those engaged in the activity (Millar, 2008; Samson, 2012). The exception is Whitson (2011) who argues that waste material plays a central role in organizing social spaces. The findings in this study concur with the idea that space and place is actively produced by social practices, institutions and waste material. However, it further extends this idea and suggests that workspaces are produced and constituted by assemblages of humans and non-humans. The findings in Chapter six in particular revealed that the workspaces of informal waste collectors are produced and constituted by how actors (both formal and informal), rules, institutions and so forth interacted with non-humans such as trolleys, carthorses, *bakkies*, storage facilities and waste materials. The findings in Chapter six in particular shows how the workspaces of informal waste collectors are produced and

constituted by a complex mix of formal/informal and human/non-human assemblages. This suggests that workspaces are not only produced by social practices and institutions but by a complex mix of humans and non-humans and formal/informal assemblages. This is significant because it not only tells us about how spaces are produced and constituted by assemblage of humans and non-humans but also about the nature of these workspaces. We learn from this finding how complex and dynamic the production of spaces is in the urban informal waste economy.

Thirdly, including the non-human in the analysis of how informal waste activities are regulated also has implications for the policy debates in the informal waste literature. Here the findings revealed that regulating waste management practices also involves coupling and de-coupling humans and non-humans in particular ways. Chapter four shows that the waste by-laws and standards regulated how waste material acted and how informal waste collectors interacted with waste materials. This finding adds value to Medina's (2007) discussion of municipal policy responses to informal waste activities that mainly focus on the nature of the social relationships between the informal waste economy and local municipalities. It suggests that waste management policies not only regulate waste management practices and the interactions between formal and informal actors but also regulates the interaction between humans and non-humans.

Lastly, including the non-human in the analysis of how informal waste activities are regulated also has implications for how informal waste collectors are viewed. Throughout the substantive chapters the findings revealed that the interaction of informal waste collectors with non-humans such as trolleys, carhorses, *bakkies*, storage facilities, wheelie bins and so forth made their work visible in a particular ways that often dehumanized, victimised and devalued the work that they carried out. This finding is important and provides further empirical support to Whitson (2011) and Samson's (2012) work on the social identities of those who collect waste informally. However, it also draws attention to the role of non-



humans in shaping the social identities of informal waste collectors. It suggests that the social identities of informal waste collectors are not only determined by the nature of their activity but also by the type of non-humans that they use in their daily activities.

*Contribution to urban informal economy literature*

This study contributes to the urban informal economy literature by extending existing ideas of how informal activities are regulated. By including the non-human as a key actor (in Latourian terms) in the analysis of how informal activities are regulated this study contributed to the urban informal economy literature in the following way; first, the study extended the notion of how the urban informal economy is regulated. The findings suggest that the urban informal economy is regulated by hybrid modes of regulation that included a complex mix of human/non-human assemblages and formal/informal arrangements. The findings reveal how assemblages of humans and non-humans - informal waste collectors and trolleys, carthorses, *bakkies* and storage facilities acted together in ways that enabled or constrained their daily activities. It also shows how formal and informal actors, rules, institutions and so forth operated in one space to regulate informal activities. This finding confirms the work of some scholars who argue that the urban informal economy is regulated by hybrid governance arrangements that include formal and informal actors and institutions (McFarlane, 2012; Meagher, 2012; Lindell and Meagher, 2013; Cleaver et al., 2013). However, it further extends the current notion of hybridity that is mainly concerned with institutions, rules, norms and governance arrangements beyond the formal/informal divide by including the non-human in the analysis. By including the non-human in its analysis of regulation in the urban informal economy, this study suggests that that the notion of hybridity is multi-layered and dynamic and includes complex mixes of human/non-humans and formal/informal.

Second, including the non-human in the analysis of how urban informal activities are regulated have implications for how we conceive of agency in the urban informal economy literature. Arguably there are two broad ways in which agency is conceptualised in this literature. The first relates to individual forms of agency where individuals engage in a myriad of ordinary ways or daily practices of resistance as a means of struggle against broader issues of class and globalization (Scott, 1985; Bayat, 2000; Simone, 2004). The second form of agency relates to collective agency where people engage in collective forms of struggle in which they develop collective visions to improve working and living conditions and sometimes challenge state discourses (Appadurai, 2001; Lindell, 2010a, b, c). While these scholars offer interesting insights for understanding agency in the informal economy their idea of agency is largely located within human actions. The findings in the substantive chapters reveal that agency of non-humans like trolleys, carthorses, *bakkies*, storage facilities and waste material was constituted by how informal waste collectors related to these non-humans and related to other actors, such as community improvement districts, commercial clients, local residents and so forth. This suggests that agency is not necessarily an inherent attribute of humans but is always in formation in how humans and non-humans relate to each other. This finding is significant because it not only tells us about the distributed nature of agency but it also tells us of the nature of agency and how agency is constituted. From this we learn that agency is relational and made in associations between humans and non-humans.

The idea of agency as distributed across the human/non-human divide is not new and has been well explored from the perspectives of actor network theory (see for e.g. Latour, 1993); feminist studies (see for e.g. Haraway, 1991); political ecology (see for e.g. Bennett, 2010); political geography (see for e.g. Hobson, 2007; Dempsey, 2010) and so forth. The findings in this study are consistent with studies in these fields and provide further empirical support to these bodies of literature.

Third, including the non-human in the analysis of how the urban informal economy is regulated also had implications for how spaces are produced in the urban informal economy. It extended the current notion of how spaces are produced or constituted in the urban informal economy scholarship. The findings in this study suggest that spaces were produced and constituted by assemblages of humans and non-humans. Chapter six revealed that the spaces where informal waste activities were carried out were assembled by a complex mix of humans and non-humans and formal/informal arrangements. This suggests that spaces in the informal economy are dynamic and assembled by humans and non-humans. This finding is significant because it not only tells us how spaces are produced, but the findings also tell us more about the nature of spaces in the urban informal economy. From this finding we learn that the production of spaces in the urban informal economy is dynamic and iterative - space is organized by assemblages and then assemblages organize spaces.

Fourth, including the non-human as a key actor in the analysis of how urban informal activities are regulated also had implications for the notion of how support networks are mobilised and regulated. The findings in Chapter Seven are particularly important because it revealed how informal waste collectors mobilised resources through assembling hybrid collectives of humans and non-humans through the process of enrolment. This suggests that support networks in the urban informal consist of heterogeneous associations of humans and non-humans. This finding is significant because it not only tells us about the heterogeneous nature of support networks in the urban informal economy but it also tells us more about how networks are assembled. From Chapter Seven, we learn that human actors and their institutions, rules, norms and governance arrangements are not the only actors that regulate how individuals enrol others in support networks but that non-humans are also active participants in networks.

Another key issue that emerges from Chapter Seven that has implications for how support networks are mobilised and regulated in the informal economy is the

translation of social relations and its impact on how resources are mobilised in support networks. The findings in this chapter revealed that the enrolment of humans and non-humans in support networks did not always translate into tangible benefits but also sometimes resulted in challenges. This suggests that the associations of humans and non-humans that were assembled in support networks translated and transformed how informal waste collectors achieved their goals. This finding is significant because it shows that it is not only the outcome of power relations that regulate support networks but also how these social relations are translated and transformed in the process of mobilising resources. This implies that there is a need to move beyond the focus on the outcomes of power relations and how it shapes social networks in the urban informal economy but also focus on how these social relations are translated and impact how informal actors mobilise resources.

*Contribution to the literature on (geopolitical) regulation*

The study has also contributed to the literature on regulation by confirming and extending existing ideas about who regulates and how regulation is carried out. Including the non-human as a key actor (in Latourian terms) in understanding the regulation of urban informal activities had the following implications for regulation literature. First, the findings in this study suggest that regulators are not only a representation of state or non-state institutions but also include non-humans. Chapter five in particular revealed that trolleys, carthorses, *bakkies*, storage facilities and waste materials act as regulators that mediate, organize and regulate interactions with other actors. This suggests that these non-humans are regulators that actively enable or constrain activity. In this sense, the study responds to Cloatre and Dingwell's (2013) recent recognition within regulation studies that it is important to understand regulatory entities and activities beyond those represented by state and non-state institutions by including the non-human in analyses of regulation. In doing so, the study also provides empirical support to this evolving body of literature.

The next implication relates to the notion of 'regulatory space' and how it has been deployed in the regulation literature. In Chapter six the metaphor is considered as an assemblage of humans and non-humans. The findings in this chapter demonstrate how humans and non-humans act in association with one another to steer the flow of events. In doing this, it shows that 'regulatory space' is not limited to actors, institutions, rules, norms and governance arrangements but also include non-human actors. This suggests that a relational reading of the social order that emerges in 'regulatory space' offers the space to consider the different elements (both human and non-human) and combines and acts together in steering the flow of events. This implies that regulation studies needs to rethink the current conception of 'regulatory space' and consider it as an assemblage. This is important because considering 'regulatory space' as an assemblage draws attention to heterogeneous associations and how these steer the flow of events.

Another issue that emerges from this study that has implications for the regulation literature is how the notion of enrolment is deployed in the regulation literature. There are currently two ways in which enrolment has been deployed in regulation studies. The first is present in the work of Black (2002b, c) where enrolment is used as a framework to unpack processes of ordering. The second relates to the work of Braithwaite and Drahos (2000) where enrolment is used as a metaphor to show how actors become powerful. While these ideas of enrolment offer interesting insights into understanding regulation, they are largely focused on actors in state or non-state institutions. Deploying the ANT idea of enrolment in Chapter seven, the findings revealed that the process of enrolment involved building hybrid collectives of humans and non-humans in order to achieve a goal. This suggests that actors enrolled both humans and non-humans in their support networks in order to achieve their goals. This finding is important because it shows that networks actors are not only humans but that non-humans also make a difference in the support networks of informal waste collectors. The implication here is that regulation studies need to rethink their assumptions of who actors in

networks are. Another implication is that the current idea of enrolment should be extended to include non-humans as actors in order to provide a comprehensive understanding of the process of enrolment.

In addition, deploying an ANT idea of enrolment also allowed for exploring how the social relations in the support networks of informal waste collectors were translated. The findings revealed that the hybrid collectives of humans and non-humans that were enrolled did not always translate into tangible benefits and also reconfigured the personal and professional ties of informal waste collectors. This suggests that although informal waste collectors intended to achieve their goals, it was often interrupted by other forces that were beyond their control. This implies that enrolment is a dynamic and transformed how resources are mobilised in networks.

Lastly, including the non-human in the analysis of regulation in the urban informal economy also sheds light on regulation and how it is constituted. Throughout the substantive chapters, the findings revealed that regulation is actively constituted by multiple actors that include humans and non-humans and how these actors interacted with one another. This finding is consistent with Black's (2002, a, b, c) idea about regulation being actively constituted through enrolment. However, it differs in that it draws attention to the role of non-humans in constituting regulation. It suggests that regulation is actively constituted through assemblages of humans and non-humans. This finding also resonates with other scholars like Shearing and Stenning (1987) and Hentschel (2010) that make similar observations in studies of security governance.

#### *Contribution to urban sociology literature*

This thesis has also contributed to urban sociology literature by confirming existing ideas of how spaces are produced in an urban context. It did so by empirically demonstrating that the spaces where informal waste activities took place were produced by assemblages of humans and non-humans. The findings revealed

that through their activities with trolleys, carthorses, *bakkies* and storage facilities informal waste collectors produced spaces that often enabled or constrained their work. In addition the findings also show that spaces were also produced by formal/informal arrangements. In this sense, by demonstrating how spaces were assembled by heterogeneous factors, this study confirms the ideas of Amin and Thrift (2002) and Amin (2007) who make similar observations in their work. In showing the different ways in which spaces are assembled, this study provides further empirical support to a growing body of literature on urban sociology.

Lastly, the study provides further empirical support to the idea that the urban social order is constitutive of humans and non-humans. Throughout the substantive chapters, it is evident that urban social order in the urban informal economy is constitutive of humans and non-humans. The findings revealed that it is a mix of actors, institutions, rules, and non-humans that are involved in the production of social order. This is important because it shows that urban social order, specifically in the urban informal economy, does not necessarily emerge from the social interaction between humans but also emerges through the interactions with non-humans.

### **8.3 Suggestions for further research**

Finally, I would like to identify some emerging lines of research to further develop a research agenda on assemblages of humans and non-humans in informal economies. This study has opened up the opportunity to explore in greater detail how assemblages of humans and non-humans organise the daily activities of those operating in the informal economy. In this instance, more research is needed into understanding how humans and non-humans entangle and disentangle through various social, economic, and political processes. It is important to chart these trajectories in order to gain a heterogeneous understanding of the nature of social relations and how social order is created and contested in the informal economy.

Studying assemblages of humans and non-humans in the informal economy has also opened up the possibility of exploring the power of non-humans and how it shapes the social interactions and relations in the informal economy. As this study demonstrated, non-humans act and produce certain effects that enabled or constrained informal activities. In this study we also learned that non-humans are not always what they seem, i.e. they are not just objects, resources or equipment that are important to carry out informal work but are active participants in the daily lives of those operating in the informal economy. More research is needed to unearth the liveliness or 'thing power', in the words of Bennett (2010), in the informal economy.

If all entities, humans and non-humans, are rendered visible in a discussion of how informal activities are regulated, it is also important to understand how power relations are shaped. This study demonstrated that power was exercised through making alliances that assembled humans and non-humans in various ways including formal-informal arrangements; creating incentives; configuring personal and professional relations. In doing so, it also raises a key question concerning power relations in networks in informal economies: how is power diffused in networks if we are to take into account humans and non-humans as actors in a network? This question is not new and has been the central focus of Actor Network Theory. However, it can offer interesting insights for the current debates on power in informal networks.

Lastly, the study was limited to an empirical example focusing on a specific type of informal work – informal waste collection in the city. Due to the nature of informal waste work on the streets, particular types of assemblages of humans and non-humans have emerged in the study. It would be interesting to look at other types of waste collectors, for example those who operate at landfill sites and the assemblages that might emerge in that context. Additionally, it would also be interesting to look at other types of informal economic activities, such as street trading to see what types of human and non-human assemblages emerge and how it



regulates those engaging this activity. Therefore there is a need for empirical research focusing on other types of informal activities.

#### **8.4 Concluding remarks**

In conclusion, the study has provided a better understanding of how urban informal economies are regulated by including the non-human in its analysis. In doing so, it adopted the Latourian notion of the non-human as an actor and showed that informal activities are regulated by assemblages of humans and non-humans.

Viewing regulation in the urban informal economy as an assemblage of humans of non-humans has the following implications; first, the multiple actors involved in social order in the everyday urban life cannot be reduced to the rules and norms of institutions, communities, or individuals. Instead, social order in the everyday urban life is produced in multifaceted way that includes both human and non-human actors. This provides insight into the various ways of how ordinary people engage in building collectives (human and non-human) in order to make an income. Second, it also provides insight into the notion of social exclusion in the city and how it is constituted. In this instance, it is not merely the outcome of a set of social relations that includes rules, norms, and institutions but is configured by human and non-human relations. Discrimination, precarity and marginalisation become the outcome of how humans and non-humans interact with each other and those around them. This also has broader implications for how one understands urban inequality and how it is configured.

Finally, at another level this thesis also tells a bigger story of how one can reimagine the social world as a world of assemblages where humans and non-humans have an equal standing in steering the flow of events. In this world, social order is not the sum of human social relations that includes rules, norms, institutions and so forth but it is co-constituted and configured in collaboration with its non-human counterparts.

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### **Other Media**

*Tania raised us* [DVD]. 2004. Produced by J. Lewis & L. Blankenberg & Directed by J. Lewis. Rondebosch, Cape Town: Community Media Trust.

## APPENDICES

### Appendix A: Consent Form

University of Cape Town

PhD Research Project

Researcher: Suzall Timm

**Modalities of Regulation in the Informal Economy: A Case Study of the Waste Collectors in Cape Town**

#### CONSENT FORM:

I \_\_\_\_\_ hereby state that I will grant permission to

(Surname, Name) Suzall Timm to use information and interviews that I have provided to her for research purposes.

I have been informed by the researcher of the following:

1. Participants are under no obligation to participate in this research project.
2. Participants are free to participate or to decline to participate or to withdraw from the research at any time.
3. Identity of research participants will be protected with strict anonymity.
4. Information obtained from participants will be kept confidential and will not be revealed unless if given permission to.
5. Participants will be treated with respect and their privacy and dignity will be protected.

I have read and understood the above.

Signed at \_\_\_\_\_ on this \_\_\_\_\_ day of \_\_\_\_\_ 2012

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Participant

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Suzall Timm



## Appendix B: List of Formal Interviews

1. Interview: City of Cape Town Waste Minimisation Unit Representative (1), 4 April 2009, Cape Town.
2. Interview: City of Cape Town Waste Minimisation Unit Representative (2), 4 April 2009, Cape Town.
3. Interview: City of Cape Town Waste Minimisation Unit Director, 4 April 2009, Cape Town.
4. Interview: Assistant Director: Waste Management Governance, 30 June 2009, Cape Town.
5. Interview: *Bakkie* brigade operator, 23 July 2009, Cape Town.
6. Interview: *Bakkie* brigade operator, 9 September 2009, Cape Town.
7. Interview: Solid Waste Network Representatives, 16 September 2010, Cape Town.
8. Interview: Skarelaar (1), 1 October 2009, Cape Town.
9. Interview: Skarelaar (2), 1 October 2009, Cape Town.
10. Interview: Skarelaar (3), 1 October 2009, Cape Town.
11. Interview: Cartie (1), 23 October 2010, Cape Town.
12. Interview: Cartie (2), 23 October 2010, Cape Town.
13. Interview: Cartie (3), 23 October 2010, Cape Town.
14. Interview: Cartie (3), 23 October 2010, Cape Town.
15. Interview: *Bakkie* brigade operator, 23 October 2010, Cape Town
16. Interview: Skarelaar, 8 November 2010, Cape Town.
17. Interview: Skarelaar (1), 26 January 2011
18. Interview: Skarelaar (2), 26 January 2011
19. Interview: Skarelaar (1), 27 January 2011
20. Interview: Skarelaar (2), 27 January 2011
21. Interview: Skarelaar (1), 28 January 2011

22. Interview: Skarelaar (1), 28 January 2011
23. Interview: Skarelaar, 21 April 2011, Cape Town.
24. Interview: *Bakkie* brigade operator (1), 2 December 2010, Cape Town.
25. Interview: *Bakkie* brigade operator (2), 2 December 2010, Cape Town.
26. Interview: *Bakkie* brigade operator (3), 2 December 2010, Cape Town.
27. Interview: *Bakkie* brigade operator (4), 2 December 2010, Cape Town.
28. Interview: Super Care Representative, 24 January 2012), Cape Town.
29. Interview: Trashback Representative, 8 March 2012, Cape Town.
30. Interview: South African Plastics Recycling Organisation Representative, 26 March 2012, Cape Town.
31. Interview: Groote Schuur Improvement District Representative, 25 October 2012, Cape Town.
32. Interview: Skarelaar, 8 October 2012, Cape Town.
33. Interview: Skarelaar (1), 30 October 2012, Cape Town.
34. Interview: Skarelaar (2), 30 October 2012, Cape Town
35. Interview: Skarelaar (3), 30 October 2012, Cape Town.
36. Interview: *Bakkie* brigade operator, 12 June 2013, Cape Town.
37. Interview: City of Cape Town Waste Minimisation Representative, 12 June 2013, Cape Town.
38. Interview: Skarelaar (1), 12 June 2013, Cape Town.
39. Interview: Skarelaar (2), 12 June 2013, Cape Town.
40. Interview: Carthorse Protection Association General and Fundraising Manager, 26 June 2013, Cape Town.
41. Interview: Cartie (1), 26 June 2013
42. Interview: Cartie (1), 28 June 2013, Cape Town.
43. Interview: Cartie (2), 28 June 2013, Cape Town.

44. Interview: Cartie (3), 28 June 2013, Cape Town.
45. Interview: Cartie (4), 28 June 2013, Cape Town.
46. Interview: Cartie (5), 28 June 2013, Cape Town.
47. Interview: Carthorse Protection Association Employee, 28 June 2013, Cape Town
48. Interview: Observatory Improvement District Representative, 16 July 2013, Cape Town.

